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THE CULTIVATOR.

"TO IMPROVE THE SOIL AND THE MIND."

TRIAL OF PLOWS.

Experiments in England and at Worcester, Mass.

(*Concluded from page* 11.)

It has long appeared clear to us, that in all calculations on the power required in plowing, the important point of friction or adhesion was too much overlooked; a fact to be regretted, as it is plain that on adhesive ground the great point in the plow is to present the least surface, while in loose, light, friable, or sandy soils, surface forms no objection. The experiments of Mr. Pusey fully confirm the correctness of this supposition. The plow made on mathematical principles, (Ferguson's) which, setting adhesion aside, as is seen in trial 3, would require the least power, required the most, owing to its long wedge-like form, the great surface of its mold-board, and its wanting a wheel, which made its surface draft so enormous. In a clay soil, or one of great tenacity, the less surface there is exposed, the easier will the draft be for the horses. If any one doubts it, let him test the difference in the force required to draw a broad shovel or a narrow one over a bed of clay. The difference between Ferguson's Scotch plow and the short open one of Hart, is in this respect conclusive.

There is another error, we believe, quite common among farmers, and that is that the resistance to the plow increases with the rapidity with which the team moves, or in other words, that a team moving one and a half miles an hour, does not exert so great a force in plowing, as one that moves at the rate of two and a half miles an hour. This mistake arises from overlooking the fact that friction or adhesion is rarely, perhaps never, increased by increased rapidity of motion. In plowing, the resistance arises from the weight of the implement pressing against the bottom of the furrow, that pressure increased by the weight of the furrow slice, the rubbing of the plow against the earth on the land side, and the furrow slice rubbing against the mold board; a resistance not to be increased by additional speed. It is true the amount of resistance in an hour, is greater at a good pace than in a slow one, as a greater amount of earth is moved, but that does not affect the amount of resistance at any given moment. The following table, showing the force required at different rates of speed, in a series of experiments, made for this purpose by Mr. Pusey, will show the correctness of our position:

Rate of going per hour.	Time required to plow an acre.	Draft of plow.
1½ miles,	7 h. 20 m.	23 stone.
1¾ "	6 h. 30 m.	23 "
2¼ "	4 h. 0 m.	22 "
3¼ "	3 h. 8 m.	24 "

Thus it appears that a pair of horses walking at a pace which will plow an acre in four hours, do not exert as much force as a pair that requires seven hours to perform the same work.

Mr. Pusey remarks, "In plowing an acre with the furrow 9 inches wide, the horse has to walk in the furrow 11 miles exactly; if then he plows three-quarters of an acre a day, he has to walk 8¼ miles only: if five quarters, or a Scotch acre, he must pass over 12⅔ miles, but 5½ miles more than before." Where the furrow is twelve inches wide, as is generally the case here, the travel will not of course be as great: and whether he goes at the rate of one and a half or two and a half miles an hour, can make but little difference in the fatigue of the horse, as the severity of the draft is not at all increased. That the power of a horse to drag a weight decreases with his velocity is certain, but this is depending on circumstances that can rarely have application to plowing or other farm labor. The man therefore, who accustoms his young horses to step out freely (and all the movements of a horse in harness, are the result of habit,) will find a span will plow an acre and a half a day, ordinarily, with the same ease that they would an acre, or even less, if suffered to move at the snail's pace so common with many farm horses. In the hard labor, such as plowing, or heavy work on the road, the horse cannot be forced beyond his natural pace to any extent, without seriously distressing him; and as his rate of going is very much depending on his training, it is a point not to be overlooked in rearing farm horses, more than others.

[*Prouty & Mears' Premium Plow*—Fig. 7.]

There can be no question that the disposition or make of the harness in which a team is worked, has much influence on the ease with which their labor is performed. The draft must of course be performed by the muscular strength and weight of the horse, and the point from whence they draw must be the shoulder; but the line of draft, or suspension of the line of draft, may be much shortened, and in all properly made harnesses is shortened, by a wide strap of leather properly padded passing over the back and carrying the traces in such a direction or position, that when at work the weight of the whippletrees and part of the weight of the plow, where there is no wheel, rests on and is carried by the back of the animal, and so far lessens the weight of draft. In arranging a harness, allowance must be made for a high or low draft, on the wagon, or on the plow, for instance, so that the support rendered by the back strap may be effectual in both cases. In plowing, the traces should be as short, or in other words, the horses should be as near the plow as possible. This is desirable for two reasons; it gives a greater inclination to the line of draft, and makes the weight and muscular force of the horse act with greater efficiency; and by lessening the distance between the point of draft and the point of suspension of the plow which is the share point, it materially lessens the surface draft. A very long beam to a plow unless supported by a wheel, must of necessity act injuriously by increasing, owing to its lever-like power, the surface draft. A good exemplification of our ideas on this matter of harness and draft, may be seen in the figure of the Clydesdale horses and Scotch plow, which we have given from the English Journal alluded to.

Mr. Pusey speaks of producing an uplifting power, by shortening the point of suspension in the back strap, or placing that so far back that there will be considerable deviation from a direct line in the trace from the whipple-tree to the point of draft in the collar. We should not approve of any uplifting power, farther than what is required to sustain the weight of the beam, whipple-trees and traces, as mentioned above, since, as the plow acts only as a wedge, any uplifting force exerted more than this, must tend to throw the point out of the ground, and must be met by constant counteraction on the part of the plowman. All experience shows that a plow to run well, should be easy for both the team and the holder, and that any effort that is required on the part of the plowman to keep the implement in place while at work, adds proportionably to the heaviness of the draft, and consequently to the distress of the horses.

In the July number of the Farmer's Magazine for 1840, page 17, there is an account of some experiments made by an individual, which in the main, go to prove the correctness of the results obtained by Mr. Pusey and at Worcester. Several plows were tried; the ground was an oat stubble, hard from dry weather, and the result was as follows—furrow 5 inches by 9.

Hart's plow,	13 stone.
Wooden plow,	17 "
Iron plows,	19-20 "
Old Welsh plow,	20 "

Hart's wheel was then fitted to the wooden plow, and on the same ground the draft was at once reduced to 14 stone. In this instance, the Hart maintained its superiority as before; and this the experimenter attributed to its open mold-board, which so greatly reduced the surface exposed to friction; but he objects to the work of this plow, "that it leaves the furrow standing too much on its edge, whereby the surface grass and weeds are not sufficiently covered and destroyed." On the subject of the wheel, this experimenter makes the following remarks, which we think eminently just. "Of the advantage of a wheel, I think there can be no question, for, besides keeping the plow constantly to the same depth, it seems always materially to lighten the draft; and I think the reason is plain, for when at work, much of the surface draft is transferred to the wheel, from its resisting the tendency the share has to draw the plow downwards."

From the results of these various experiments, those of Mr. Pusey, those at Worcester, and those described in the Magazine, it would seem, in the first place, that the friction or adhesive power of the plow is much greater than has usually been allowed, and that consequently the less surface there is exposed, the less will be the draft. This opinion receives corroboration from the fact that the skeleton plow used in some parts of England where the clay is stiff, a plow in which the cutting part is narrow, and the mold-board of narrow bars of iron, runs easily with two horses, where three or four would be required to move the Scotch plow with its long, broad, smooth iron surface.

2d. That the shorter the working part, or that part of a plow exposed to friction, can be made, consistent with steadiness of motion in the ground, the easier will be the draft. This arises from two causes—the less weight of the implement itself; and the less space for adhesion of earth or friction. It is not to be inferred, however, that such short, square-breasted plows, will do the best work; on the contrary, the long plows invert the earth more completely; the advantage is only in the matter of lightness of draft.

3d. That a wheel plow is to be preferred to a swing plow, where lightness of draft is a great object. On smooth, or well cultivated lands, a wheel acts favorably several ways; it lessens the surface or friction draft in the same degree that a weight can be easier rolled than slid over the ground; and it regulates the depth without that constant attention of the plowman that some other forms of this implement require. The wheel, however, will not make a poor plow a good one, though it may obviate some of its deficiencies. On soft, clayey land the wheel plow is inadmissible, as the wheels clog and add to the weight to be drawn.

4th. That a harness should be so constructed, as to give the greatest effect both to the muscular force and weight of the horse, and hence the nearer he is brought to the point where the power is to be exerted, the better. Horses abreast have much more power than when in line; and experience shows that a team works more easily when part of the weight is supported by the back rather than wholly by the neck.

5th. That a pace of 2½ or 3 miles per hour, occasions no heavier draft than a pace of 1½ miles per hour. This is an important fact, where much plowing is to be performed, and it is clear the pace must add to or detract much from the value of the farm or road horse. The pace, however, when once established, cannot be essentially quickened without causing much additional distress to the animal; and the rate of traveling is in a great measure depending on the training of the colt. Neither man nor beast can exert themselves beyond their usual habits for any time without great suffering; but both man and animals have the power of accustoming themselves to movements and exertions, which, unless the result of habit, would be impossible or fatal.

6th. While the Worcester experiments show that in the same soil, some plows have more than 100 per cent advantage in the lightness of draft, the experiments of Mr. Pusey show that the difference in power required to plow loamy sand, and clay loam, is not less. By overlooking this important fact, and by not adapting the plow and the team to the difference in the soils, some farmers are guilty of the most cruel treatment of their animals. A pair of horses is expected to perform labor that would severely tax the powers of four, and this perhaps, is one way to account for the "villainous foundered and spavined" beasts that throng our streets, worn out in a few years, and turned over to the tender mercies of some barbarous master, when if properly treated they might have been relied upon for many years longer.

7th. It may, we think, fairly be inferred from these experiments, that there are two elements of resistance

to be taken into account in the construction of plows, one arising from the weight to be moved, and the other arising from friction and tenacity. The first is the subject of mathematical calculation; and the best methods of obviating it may be ascertained with certainty. The last is continually variable, differing almost in every field, and therefore not to be met by any demonstrations of theory. The experiments of Mr. Pusey prove that the resistance from friction or tenacity is greater than that from the simple division of the soil, and it unfortunately happens that the very construction best adapted to divide and raise the earth, is the one that offers the most resistance by friction. Thus the Scotch plow, constructed on mathematical principles and of a most beautiful model, an implement that expends less power in moving the earth than almost any other, owing to the increased friction it occasions from its extent of surface acted upon, is one of the very heaviest draft plows to be found. This was proved not only by the experiments made by Mr. Pusey, but by those instituted at Worcester, in both which cases the Scotch plow worked heavier than almost any others. We think also that too little attention in constructing plows has been paid to the line of draft. It is well known that with a single exception, plows are so constructed that the point of the share is in that line, or in other words the landside of the plow coincides perfectly with the line of draft. This is evident by the birdseye view given of the most celebrated English and Scotch plows in the Encyclopedia of Agriculture, or by an examination of most American plows. The plow noted as an exception, is Prouty & Mears' Centre Draft plow, (fig. 7,) the one that obtained the $100 premium at the Worcester Fair, and which worked 100 per cent easier than some other plows on the ground. In this plow the coulter and the point incline to the land side so far, that the draft is equal on both sides of the beam, as was proved by its showing no disposition to deviate from its course, when left to its own guidance, and of course imposing no labor on the plowman or the team in their efforts to keep it in a proper position.

We make no apology for the length to which this article has extended. Great as has been the improvement in this important implement, since a plow consisted of a crotched stick drawn by an old woman and an ass yoked together, according to Pliny, there is still ample room for removing existing defects; and every effort at obviating difficulties and rendering the plow more perfect, should have the full benefit of promulgation and discussion

NECESSARIES AND LUXURIES.

"The luxuries of life must always be made subservient to its necessaries," is a remark of Borlley's, as just now, and as worthy of consideration as it was nearly one hundred years ago; yet how often do we see this order reversed, and the necessaries made to give place to the luxuries. By the term necessaries of life, is to be understood things absolutely essential to the health, comfort, and subsistence of mankind; by the word luxury, those things not requisite to subsistence, health, or comfort,—things, the want of which arises from accidental circumstances, and are usually possessed by few. Thus there are necessaries and luxuries in almost every department of life,—in food, clothing, literature, and education. The bread, the meat, and the water, are the necessaries of food; the mixtures, the condiments, the spice, and the wines, the luxuries; the clothing essential to decency, and protection from the effects of climate, are the necessaries of dress; the fine linen, the embroidered silks, and the laces, are its luxuries; in language, to an American, a competent knowledge of his good old mother English is a necessary; French and Italian, Sanscrit and Persian, are luxuries; and in books, those that relate to his business or profession are the necessary ones; those that serve only to beguile an hour, or assist him in killing time, are the pernicious luxuries.

The history of the world, however, shows that, in the progress of events, articles that once were deemed luxuries, or the property of the few, cease to be such, and are ranked among the necessaries when common to all. Thus meat, a few centuries since, and in many countries now, is by the common people deemed a luxury, as it is seen on their tables only once a week; and the well known extent of the wishes of Henry the 4th, for his people, was that every family should have meat on Sunday. Here, meat ceases to be a luxury from its commonness, and takes its place among the necessaries. So with clothing; all the finer kinds of goods, linens, woollens, and silks, on their introduction, were deemed luxuries, and some kinds of them may justly be considered so at the present time, but that is depending on other circumstances, rather than on the fact of their being woollen, linen, or silk. India cottons, fifty years since, were deemed a luxury, but now, when far superior cottons are the product of our own fields and manufactories, they have ceased to be such, and cotton cloths have taken their place among the necessaries of the household. Woollen cloths, made from the fleeces of our merinos, such as are now worn by almost every one, fifty years since would have been pronounced luxuries of the highest grade, and would justly have had that name, as only the rich and the great at that time could be dressed in broadcloth. Now, when we grow the fleece, and manufacture the cloth, it has fallen from the rank of a luxury into that of a necessary. So we imagine it will be with silk, if, as we hope, its production shall be fully established in this country. It is now perhaps the greatest, certainly the most expensive, of our luxuries; but, as in the case of meat, woollens, and cotton, let silk become a matter of home production, the growth of our own farms, and the production of our own manufactories, and it would at once take its place as one of the necessaries of life, because better adapted for the purposes of clothing than almost any other substance.

Some seem to apprehend that if the culture of silk is successful, the production of the other necessaries of life, the bread, meat, and wool, will be suspended; and the nation will suffer. The best reply that can be made to this, would be an examination of the effect produced on the great mass of the people by rendering meat, wool, and cotton so common as to deprive them of the name of luxuries. Can a single instance be pointed out where this has been done, in which the mass has not been benefitted, and their wealth and their comforts increased? Is there less bread raised in the country, or is meat more scarce, than it would be if broadcloths had remained a luxury, and one suit was now, as formerly, made to descend from father to son? No one will pretend it; on the contrary the means of production have increased with the causes that have led to this change in clothing; and we doubt not that should the attempt made to introduce the silk manufacture here succeed as has those of wool and cotton, the same beneficial results would ensue. The capital now sent abroad to purchase silks, would, the most of it, be invested in improvements of the soil, and both meat and bread would be found to be increased instead of decreased.

National Gallery of American Agriculture and Manufactures.

We have received from the Hon. H. L. Ellsworth, Commissioner of Patents, a notice which will be found below, of the readiness of the spacious Hall that has been erected for the above purpose, for the reception of such articles as may be forwarded; and we are happy to believe that ere long a collection will be found at that place of specimens of American skill, and from the American soil, inferior to no museum of the kind in the world.

And what good reason, we would ask, can be given why we should not have in this country a National Board of Agriculture? Such a board as is to be found in many of the best governed European countries, and which are productive of the most beneficial effects. We have been in the habit of going abroad for lessons in banking, finance, keeping the public moneys, and various other matters, and we can perceive no good reason why a lesson in the promotion of agriculture, should come with a worse grace from them, than on the other topics named. A National Board, which should hold its annual meetings at Washington, during the session of Congress, which should furnish or receive Reports on Agriculture and the Crops of the several states, which should be composed of leading agriculturists throughout the States, would occasion but little expense to the nation, and be productive of benefits beyond calculation to the whole country. The United States are and must always remain an agricultural nation. For this the soil and climate has peculiarly fitted them, and it is the duty of the government to take all proper measures to secure to the citizens of this country, the full benefit of its ample resources. The Agricultural Museum, when filled and supplied, will form a nucleus around which objects of comparison may be collected, and measures of adaptation be successfully planned and executed. We merely throw out these hints in this place, but we firmly believe that the man who shall be the means of introducing into Congress and carrying through such measures as shall secure the formation of a National Board of Agriculture, will be remembered as a national benefactor, long after the present party feuds and struggles shall be buried in oblivion.

Mr. Ellsworth is deserving of much credit for the attention he has paid to these subjects, and for the valuable information which with the limited means hitherto at his disposal, and under many disadvantages, he has collected and given to the country in his various reports. We hope the call here made will be promptly and cheerfully responded to; and that the means and the information he has proved he so well knows how to render available, will be freely rendered.

Patent Office, Nov. 20, 1840.

Notice is hereby given that the Hall in the new Patent Office for the exhibition of manufactures, is now completed. The Hall is spacious, being 273 feet long, 63 feet wide, 30 feet high, and fire proof.

Agents whose names are annexed, will receive and forward free of expense, articles which may be deposited with them. These articles will be classified and arranged for exhibition, and the name and address of the manufacturer (with the prices when desired,) will be carefully affixed. Few, it is presumed, will neglect to improve the opportunity now presented of contributing their choicest specimens to the *National Gallery of American Manufactures*, where thousands who visit the Seat of Government will witness with pleasure the progress of the arts in these United States.

If fairs, in limited sections of our country, have excited interest, what must be the attractions of a national exhibition, enriched by daily additions.

The Agriculturist may be gratified to learn, that commodious rooms are provided for the exhibition of agricultural implements, and also for the reception of seeds for exhibition or distribution.

The Commissioner of Patents, being authorized to collect agricultural statistics, avails himself of this opportunity to solicit information of the condition and character of the crops in the several sections of the country. These data will aid him in presenting with his annual report, the aggregate amount of products of the soil, and it is hoped that the public may be guarded in some measure from the evils of monopoly, by showing how the scarcity in one portion of the land may be supplied from the surplus in another.

Names of agents who will receive and forward packages for the Patent Office. Collectors of the Customs at Portsmouth, N. H., Portland, Me., Burlington, Vt., Providence, R. I., Philadelphia, Baltimore, Richmond, Charleston, Savannah, New Orleans, Detroit, Buffalo, Cleveland. Surveyors of the Customs—Hartford, Ct., St. Louis, Pittsburg, Cincinnati, Louisville, R. H. Eddy, Boston, Mass., David Gardner, (Custom House,) New-York. HENRY L. ELLSWORTH,
Commissioner of Patents.

'Notes on European Agriculture.'

Under this title, an intelligent writer in the Charleston *Southern Cabinet*, has published a series of papers on the agriculture of the various European countries, which are of a most interesting character, as showing the principal points in which their farming differs from ours, and the various ways in which ours is susceptible of improvement. We can give only a few extracts, where we should be pleased to quote columns.

Of Scotch farming, he says: "A farmer by the name of Thomas Oliver, residing five or six miles from Edinburg, leased a farm for the last twenty years of 150 acres, paying annually a rent of 10 guineas per acre ($7,500) on which he raised hay, grain, and vegetables for the market of Edinburg. This lease he has recently renewed for fifteen years (the usual time to which leases run) on the same terms, and from a poor man he has become independent in his circumstances, and now rides in his carriage. What American farmer could make a profit that would enable him to pay such an enormous rent? All may be accounted for on the principle of judicious management, and careful industrious cultivation."

Good management and good cultivation, will doubtless perform wonders, but we think there are other causes operating to prevent the farmer of this country realizing the profits of the old, and of these the two most prominent are the difference in the price of labor, and the difference in the price of products between that country and this. These two items are of vast importance in an estimate of comparative profits, and we have reason to think are too frequently overlooked by travelers and others.

He gives the following lively and just picture of the agricultural Fairs in some parts of Germany; and there is no truth more conclusively proved, than that an improved agriculture and fairs usually accompany each other.

"On the continent, especially in Germany, their annual fairs bring together the farmers and peasants of all the surrounding country, where their ambition and industry are stimulated by a variety of fetes, the distribution of prizes to successful competitors; and while princes, dukes, and barons are engaged in awarding prizes to those who have been most successful in the cultivation of grains and cattle, their lovely wives are occupied in a humbler, but much more lively scene, in complimenting and distributing premiums to the industrious housewife, for her fine specimens of fruit—her butter and cheese—her linen cloths, weaving, knitting, and other manufactures. I have no doubt I shall be ridiculed for my want of taste, when I state, that to me, the Grand Dutchess of Baden, presenting a silver cup to a peasant girl, before an assembled crowd of farmers and nobility, for the finest specimen of manufactured gloves, was a more interesting sight than that of the gay Queen Victoria racing through St. James Park, with fifty fools at her heels, striving not to be distanced by their lovely mistress."

Speaking of the great attention paid to seeds in Europe, and the necessity there is for this where good crops are expected, and the extended nature and importance of the seedsman's occupation, he remarks: "I noticed at Edinburg, in the collection of Lawson and Son, Seedsmen and Nurserymen to the Highland and Agricultural Society of Scotland, 83 varieties of wheat, 62 of peas, 51 of turneps, 146 of potatoes, and an immense number of species and varieties of the grape."

To England he awards the palm of high and neat cultivation, 'its neat cottages adorned by the eglantine, honeysuckle, and ivy, chequered here and there by the park and lordly palace, rendered the whole land a picturesque garden.' The soil of Belgium is better than the English generally, and the excellence of the wheat of Denmark surprised and gratified him. To the grumblers about our country and its institutions, we recommend his remarks on the taxes and grinding oppressions of the old world, and think the result will be the same that the sight of these things were on him, a more fervent attachment to our Republic and our American home.

Working to be Idle.—There is many a person who has such an abhorrence of every thing that goes by the name of labor, that to avoid it, they actually incur more effort and trouble than they would to labor strenuously the same number of hours. The shabby genteel man or woman, will despise an honest laboring person, yet will spend more time in striving to render a threadbare half worn garment passable, than the laborer, or they themselves if they would shake off their dread of work, would in earning a new one of good quality. Prudence from proper motives, is a virtue, but when it arises from false pride and a scorn of labor, it is a curse.

Candles.—Candles altogether superior to the common tallow ones, are made in the following manner. Melt together ten ounces of mutton tallow, one-fourth of an ounce of camphor, four ounces of bees wax, and two ounces of alum. Candles thus made, burn with a clear brilliant light.

VERMONT BUTTER.

The county of Caledonia in Vermont, has long been celebrated for its dairies, and its butter and cheese has frequently carried off the prizes from places where the competition is open to the whole union. Caledonia, as its name imports, was chiefly settled by Scotch families; and the thrift of the country is strongly observable in that agricultural district. The editor of the Farmer's Visitor spent a few days in that county not long since, and has given some interesting notes of his visit connected with the agriculture of the place. In the best dairies, those from which the butter that took the high premiums of the Massachusetts Society came, the milk is allowed to stand about 48 hours before the cream is taken from it. It is then churned in the old fashioned woolen hand-churn, worked in cold water, which is repeatedly drained off until the milk entirely disappears, and the less the butter is worked, the better it is deemed. Working, in the manner commonly practiced to free it from the milk, is condemned in these dairies as injurious to the quality of the butter, leaving it tough or stringy, and causing it to adhere to the knife. In the dairy of Mr. W. Bachop who has obtained five premiums at Boston for butter—two of $100 each, and three of $50 each; the milk in warm weather stands thirty hours, and in cold, forty-eight hours. In the hot season in this dairy, 6 pounds of salt is allowed to 100 lbs. of butter, and in cold weather, 4 pounds. No saltpetre is used, but about a pound of finely powdered loaf sugar is sprinkled into each hundred pounds of butter. The butter in these dairies, when made, is packed in firkins which hold from thirty to fifty pounds. It is packed so as to be very solid, and the surface of the butter in the firkin is covered with a thin white cloth, over which fine salt is spread. Some cover the surface with a pure brine and clean cloth. Caledonia butter always commands a high price in market; and that from the premium dairies ranges from twenty-three to thirty cents per lb. The summer yield of butter from a cow, varies from 100 to 125 lbs. each, taking the whole dairy, heifers and cows. That the dairy business, even at such a distance from market is profitable, is shown by the fact that nearly all the principal families engaged in it for any time, have, from small beginnings, risen to opulence. The agricultural products of Caledonia, independent of the dairy, are described as ample; and from every part of the country proofs are accumulating of the excellence of the crops, and the rich reward which has waited on the labors of the husbandman.

Comparative Profits of Small and Large Farms.

We have received from D. W. Grant, Esq., of Bloomfield, (Conn.) an estimate of the comparative expense, crops and profits of two farms, one of 20, and the other of 100 acres; the most material points of which will be found below. In the note which accompanied the estimate, Mr. G. remarks:

"I commenced farmer 12 years ago, with 500 acres of improved land, on the old system of farming. As I have been unable to personally labor, I have been under the necessity of hiring all my labor done, and I found by cultivating middling lands, and sending men to a considerable distance to work, that the expenses absorbed the income. I began to change my mode of practice some years since, and sold one half of my acres, and by improving the remaining half, I have now the pleasure of seeing them produce more than the whole formerly did; and I have no doubt but that I could sell the one half I now have, and in time, with labor judiciously applied, make the remaining half produce as much as the whole does, and with greatly increased profits. If you wish, Messrs. Editors, to stop our young men from going from the old States to the West, advocate the system of small farms. On this depends in my opinion, the future wealth of the old States. There is no necessity for emigration from the east to the west for one hundred years, and I have no doubt by diminishing the size of our farms, and giving them a more thorough and better cultivation, our wealth and population can be doubled in twenty years. Our Agricultural Society of Hartford County, have offered a premium for the best farm containing not less than twenty acres. If you will examine the statements I send you, I think you will agree with me they are about right."

Mr. Grant, in his estimate supposes the capital invested in the two farms to be the same, viz. 100 acres at $40 per acre, and 20 acres at $200 per acre, in both cases $4,000. His estimate of the crops and their value on the 100 acres, is as follows:

Twenty acres in mowing, (1 ton to the acre, average produce of the land in Bloomfield,) worth to feed stock $7 per ton, 20 tons,...	$140 00
Ten acres corn, 30 bushels to the acre, at 50 cts.	150 00
Ten loads of corn stalks at $3 per load,.....	30 00
Three acres potatoes, 150 bu. per acre, at 16 cts.,	72 00
Seven acres of rye, 12 bu. per acre at 75 cts.,	63 00
Ten acres of oats, 20 bu. to the acre, at 30 cts..	60 00
The mowing and cultivated crops take up 50 acres of the farm, leaving 50 acres for pasturing, which will keep, and keep well, 1 yoke of cattle, 7 cows and a horse, 10 head at $6 each,.....	60 00
Produce worth to feed to stock,.....	$575 00

Mr. Grant's estimate of the expense of cultivating each of these crops is drawn up with great minuteness, and a careful examination has convinced us with a close approximation to the truth: but our limits oblige us to omit the items, and we only give the aggregate of the expenses, which, on the whole 100 acres, amounts to..... $454 80

Leaving a nett profit on the large farm of.... $120 20

Statement of the produce and expenses of 20 acres of rich land:

Four acres of mowing, 5 tons to the acre, at 2 cuttings; 20 tons of hay, worth to feed to stock $7 per ton,.....	$140 00
Two acres of wheat, 30 bu. to the acre, $1 per bu.	60 00
One acre of corn, 90 bushels, at 50 cts. per bu.	45 00
Four loads of corn stalks, $3 per load,.....	12 00
One acre of sugar beets, 800 bushels at 1 shilling per bushel,.....	134 00
One acre of potatoes, 400 bu. at 1 shilling per bu.	67 00
Half an acre of ruta baga, 450 bushels, at 12½ cents per bushel,.....	56 00
Half an acre of carrots, 440 bushels, at 1 shilling per bushel,.....	73 67
The mowing and cultivated crops take up 10 acres, leaving 10 acres for pasturage, which will keep, and keep well, 7 cows, a yoke of cattle, and a horse, 10 head, at $6 each,.....	60 00
Produce, worth to feed the stock,.....	$647 67

As before, Mr. Grant's estimate of the expenses is made for each crop, but we omit them, with the exception of the corn, which we give as a specimen, and to show that he has not omitted or underrated any important point.

Cost of cultivating an acre of corn:

Carting and spreading 30 buck loads of manure,.....	$6 00
Plowing turf once,.....	2 00
Harrowing thoroughly,.....	1 00
Planting, ...	2 50
Hoeing three times,.....	10 00
Gathering, husking and shelling,.....	8 00
Labor in cultivating one acre of corn,	$29 50
The aggregate of the expenses on the 20 acre farm, including labor, seed, repair of fences, &c., is.....	$206 14
Nett profit on small farm,.....	$441 53

To our western friends it may seem somewhat strange to see the product of 20 acres of grass put at 20 tons of hay, and that as well as the other crops on the 100 acres may appear to them underrated. To us, however, who remember the average crops of common farms in the New-England States, Mr. Grant will seem very near the mark, and his estimate of crops under the old system, a liberal one; and we have seen no estimate which places the results of good and bad farming, of applying capital to land, instead of drawing it away from it, in a more forcible, and as a whole, indisputable manner than Mr. Grant's. Those of our readers who have the Genesee Farmer, or the last volume of the Cultivator, will see that we have always been the strenuous advocates of small farms, not so much for the reason that it would keep our young men from going west, but because we believe it would add most essentially to the profits of agriculture. The most profitable part of every man's farm is his garden, and Mr. Grant's 20 acres is but a garden on a large scale.

"American Society of Agriculture."

The attention of the reader will doubtless be arrested by the communication in another column, from that able writer and unwavering friend of agriculture, Solon Robinson, on the subject named above. The same subject has by others been pressed upon our notice, and it is one to which we have, both before and since receiving the *commission* of Mr. Robinson, given much attention and consideration. To show what the opinions of others, as well as Mr. R. are on this matter of national interest, we give the following extract of a letter, from a distinguished farmer near Boston. After alluding to the error into which he thinks, Judge Buel and Mr. Garnett have fallen, in expecting Legislative aid, he adds: "Now let us be sober and rely on ourselves, and our own resources. If we are to have a National, or American Agricultural Society, it must be got up by the Farmers themselves, and if it becomes popular by their agency, then, sir, mark, you will see the Legislature creeping from their dark retreat, and aiding it with all the posts of honor and their speeches, to the death. * * Please, gentlemen, move in the cause, and you will soon be seconded. Mr. Robinson and Mr. Garnett, will be at the place appointed for the meeting, without doubt, and if I am alive, and in the country, I will be there with some of my friends."

We are perfectly aware there are *some* such men as those we have named, men of public spirit, friends to agriculture, and alive to the prosperity and honor of the country, but we have not sufficient evidence that there are *enough* of such men to be found to render such an enterprise certain of success; and all must admit that a failure would be a most serious calamity to the cause of Agriculture in the United States. In declining to act as individuals, or to assume the responsibility which our friends have been pleased to assign us, we must be permitted to give a few of the reasons which have brought us to this conclusion.

In the first place, the whole experience of this country is against the probability that such an association, would, at the present time, be worthy of its name and object. With the exception of Massachusetts and Rhode-Island, where state societies are supported by the state, there is not we believe, a state society in the union in active, vigorous, *effective* existence; although many have been organized, and are perhaps, still, legally existing. Such results prove to our mind, that the farmers themselves, are not ready for the undertaking, and we fully concur in the opinion expressed, that for such purposes, they can rely on none but themselves.

In the second place, the wide spread nature of our country opposes serious obstacles to such associations, obstacles which, though they must always remain in part, are yearly diminishing. Of fifty or a hundred individuals, who would be willing to move in the matter, some are to be found in Maine, Massachusetts, New-York, Indiana, Tennessee, or Georgia; not as in Great Britain, which some have named as an example, where the whole are crowded into a space about the size of New-York or Virginia.

Again, we think the public mind has not been sufficiently instructed, and does not sufficiently appreciate the advantage of such an association, to render it successful. There are many who read, but there are many who do not, and this last class must be diminished, before in such a country as ours such societies can prosper. Men in this country are not so much influenced by example as in others; considerations of self interest have more weight; and when farmers can feel that their individual interests would be advanced by combined effort, (as we certainly believe they would) then such associations would spring up and flourish.

We are further of the opinion, that in the present condition of the country, with its scattered population, and the distance that necessarily intervenes between the most efficient friends of agriculture, well conducted Agricultural Periodicals are in a great measure performing the part here, that Farmer's Clubs, Associations and Societies, do in the more densely populated farming districts of Europe. We believe there are but about half a dozen agricultural papers in Great Britian; and the price of periodicals generally there is so great, that they are inaccessible to millions. The mass therefore, if they wish to improve, must rely on the few that are rich, and are informed, and Clubs and Societies are the natural result. Here every farmer can receive his weekly or monthly journal, and by his own fireside avail himself of the experience and the experiments, which the European farmer must spend hours, and walk miles to obtain, if he is to be benefited by them at all.

The result of the whole matter is, that we must, for the present at least, decline the duties our friends have so kindly assigned us. When the time arrives in which such an association can be organized, with a reasonable certainty of success, we trust we shall not be found backward in aiding the enterprise to the extent of our abilities.

Agricultural Journals.

One of the most conclusive proofs of the greater attention paid to farming in the United States, and the greater estimation in which husbandry is held, is to be found in the increase of Journals devoted to the use of the Husbandman, the tiller of the soil, or the breeder of animals. Only a few short years since the establishment of a single Agricultural Journal was deemed a hazardous experiment; now nearly thirty are in existence, and those of the most limited circulation probably have one greater than the pioneer publications received for years; then few men could be found in the country who would condescend to pen an article on agriculture; now the most able, talented, and influential are among the contributors to agricultral papers. Of these our own journal, The Cultivator, numbers some three hundred in the last volume; then men of standing were ashamed of being farmers, and the one who ventured, in mixed society, to speak of agriculture, was set down as an ignoramus or a bore; now it is a theme fit to be introduced in palaces; and to understand the science or to be practically acquainted with its processes, is a sure passport to consideration; then to promulgate the idea that farmers could be benefited by reading on the topic, or that agriculture could be taught in books, was considered a mark of mental aberration, and a disgrace that few were willing to encounter; then book farming was a term of reproach; now the book farmer is looked up to with respect, and prejudice itself, through the compelling power of self-interest, is constrained to acknowledge that a good thing may come out of Galilee; then to read an agricultural newspaper was the acme of absurdity; now not to read one marks the man of ignorance and prejudice, the man behind the spirit of the age.

Whatever may be a man's business or his occupation he will feel an interest in that, and if he is a man of sense, will endeavor to make himself master of the pursuit. The merchant reads on the subject of trade; the friend of education on subjects connected with the interests of learning; the mechanic or manufacturer on their respective avocations; the divine on questions connected with theology; and the farmer will naturally feel an interest in matters connected with agriculture. All these classes, and many others, have journals devoted to their own pursuits, and that the farmer should so long have been an exception, is now, when the benefits arising from such papers have been so fully developed, a matter of astonishment. It may in truth be said that a well conducted agricultural paper is at this time as necessary to a successful prosecution of farming, as the political journal is to the statesman, or the publications devoted to science, to the astronomer.

Means for the Improvement of Agriculture.

We invite the attention of the readers of the Cultivator to the following extracts which we make from the letter of an eminent individual, and one of the most intelligent and thoroughly practical farmers in our country. The opinions of such men on the subject of agriculture, and the best means of advancing it, deserve and will receive consideration:

"As to legislative aid, whenever farmers shall be convinced that it is for their advancement and interest, whenever they shall wake up to the importance of their pursuit, and its intimate connection with the prosperity of their country, they will have it; their petitions will command immediate attention, and what *we* are now craving as a boon, *they* will require as their right. But with all due deference to others, I would suggest that on this point we are premature; we are in advance of the times, and are trying to force on the farmer what he has not yet been taught to appreciate. With these views, I would rather turn the attention of the Society to the more extended circulation of Agricultural Periodicals, as the great preparative step to improvement; for myself, I feel it a great individual gain whenever I can induce a neighbor to subscribe to a periodical—he becomes to me a more intelligent and valuable associate—our minds have been occupied with the same subjects, and are prepared to converse of them when we meet, and exchange our views, opinions and experience, upon whatever has been presented to us. I also believe that occasional lectures, adapted particularly to the agricultural community, and having in view certain prejudices which might thus be overcome, would be of infinite service, and would go far to convince them of the great advantage to be derived from reading. The moment the great body of agriculturists consent to *read*, they will become the most intelligent portion of society, and I need scarce say, the most influential. Let the farmer *read*, and he will soon understand what will most conduce to his interests, and will learn how best to promote and secure them. I think then there will be no difficulty in supporting an agricultural school in various districts of the State, and I am strongly inclined to believe that they would be more useful than one large institution as was formerly contemplated. * * * *

"It may be said that these are subjects for individual action. I am aware of it, and most sincerely do I hope that every friend of agricultural improvement will so consider them, and if they view them as I do, that they may be induced to act upon them. There are those in every community, who by a small sacrifice of time and attention, and with a very trifling expenditure in aid of the objects to be desired, may in a few years revolutionize the present miserable state of agriculture around them, and thus become identified with the best interests and most enduring prosperity of their neighborhood."

This appears to us to be sound doctrine. Make men intelligent, make them to understand the subjects that are of the most consequence to them, place in their hands those works that relate to their business and their interests, and they will soon act understandingly and decisively. We believe, and we doubt not all well informed men will concur with us, that the most effectual means for the advancement of agriculture in this country, and placing the farmer in the position which the genius and institutions of the land allot to him, is the diffusion of agricultural knowledge—teaching the farmer to *read*, and thus disabuse his mind of the prejudice which still lingers with so many, of the inutility of science, knowledge, and general learning, in connection with agriculture.

It may easily be shown that there is no single occupation or business in life, where extensive knowledge is more necessary than it is to a full understanding and proper practice of agriculture. There is none so intimately blended with all the important branches of the natural sciences as this; none to which geology, chemistry, botany, and entomology, are such important contributors and invaluable auxiliaries. The earth, the air, are full of instruction to the farmer; the pebble, leaf, insect; the composition and decomposition of matter and its causes, are all before him, all constantly going on around him, all inviting attention as part of the processes he must produce if he is a successful cultivator of the soil. He must read; and if he feels the value of knowledge himself, he will be proportionably anxious that those around him, his neighboring farmers, his friends, should read also. A community of knowledge constitutes one of the strongest ties that can bind society together; whatever may be the topic, it is a bond of feeling and interest not easily broken or destroyed. An intelligent practical man may change the whole course of agriculture in a neighborhood, and give an impulse to its prosperity, which may endure long after the cause is forgotten. We have seen a man go into a neighborhood of farmers, respectable men, but who did not read, and felt the old fashioned contempt and aversion for those who did. This man was a reader of agricultural papers, and when an improvement was pointed out that his good judgment showed was adapted to his means, his farm, or his circumstances, he adopted it at once. He improved his farm by draining his lands, and nearly doubling the ordinary crops, by skillful cropping and rotation. He improved his stock by purchasing at great cost, superior animals to breed from. His neighbors at first called him a *book farmer*, and sneered at his management. They soon found the laugh was on the wrong side, and began to inquire the causes. If he could get a neighbor to read, his periodicals were always at their service; and if he met a brother farmer, some proposition was made or some inquiry started which he was sure would lead to useful results. Soon they found agricultural papers necessary, and became subscribers themselves; an agricultural paper has become as indispensable as a political one, and its arrival is always looked for with interest and pleasure. The prominent farmers of that neighborhood are now *readers;* several different publications are received; and when they meet, the comparative merits of the different modes of husbandry are freely and intelligently discussed. We would wish to see such examples as this more frequently imitated. When they become common, it will be a proud day for American agriculture. In such instances, we trace the true secret of improvement, for although the looker on may at first sneer at the reader, he is sure eventually to imitate, first the improvements he makes, and lastly his course of reading. We ask it then as a favor, of every friend to agricultural improvement, to bring a knowledge of farming periodicals to the notice of his neighbors—let them be induced to become subscribers—to read, to reflect on the means of improving their cultivation, and a point will be gained, which will afford a rational hope of rapidly increasing and permanent prosperity.

Indian Corn—a Request and Acknowledgment.

We wish to collect for the use and examination of the public as large a collection of the numerous varieties of Indian corn, as can be conveniently made. To do this, we ask the aid of our friends in every part of the country; and hope they will forward us as opportunity may offer, such specimens of this valuable grain as they may have, noting the name by which it is known, the latitude in which it is grown, the time of ripening, and such particulars relative to its origin and history, as they may be able to give. Albany offers such facilities of communication with all parts of the United States and with Canada, that the transmission of ears of corn, and it is the *ears* we wish, can be effected with little trouble and great certainty. It would be agreeable to have two or three ears of each kind, where they can be had; and as we shall at intervals acknowledge the receipt, should any be received, it will save any the trouble of forwarding the varieties so named. Dr. Brown some years since made a collection of 42 varieties, which he presented to the king of France; and in his work on this valuable plant he enumerates 36 varieties, yet there are several, well known, which he has omitted.

We have the pleasure of acknowledging the receipt of the following varieties from Theron Cowles, Esq. of Onondaga Co. Two varieties of the *Canada Flint*, middle size, yellow and white, a very hard, bright and sound corn. This ripens early, and will yield from 40 to 60 bushels per acre. Two varieties of the *sugar* or *sweet* corn, the white and the red cob kinds. Two varieties of the *Rice* corn, (this is omitted by Brown,) the pointed and the round kernel. The *Blue* corn, (Brown's No. 31.) Mr. Cowles informs us that the Rice corn, and the Blue corn adjoined at the ends of the rows, and the rice corn shows the effect in some of the kernels of the mixture of the pollen.

We have also received from H. M. Gaylord, Esq. of the same county, a bag of the *Brown* corn, for the benefit of our friends. These varieties of corn may be seen at the Cultivator office. Any favors of this kind, will be reciprocated as far as possible.

Production of Silk.

It cannot be disguised, even had any one an interest in misrepresenting facts, that many have been disappointed in their expectations the past season in the growing of silk. Many deemed a failure almost impossible; they made no allowance for inexperience, and the disadvantages inevitable to the commencement of a new business, and when they find the expected hundred pounds of silk reduced one half or three-fourths by want of foliage, or disease of worms, or defective cocoons, denounce the business as unprofitable, and the attempt to grow silk in this country as chimerical. Others with less sanguine expectations went to work more carefully; secured an abundance of foliage, procured eggs that had not been half hatched, and then chilled some three or four times, and these, by proper feeding have had good success, no loss from disease, and no difficulty in the formation or quality of the cocoons.

We find from the various notices of this subject in the public journals of the country, that many have repeated the experiment of Mr. McLean of New-Jersey, in seeing how much silk could be produced from one-fourth of an acre of mulberries, and some express an opinion, that they shall equal or exceed his crop. From a variety of notices of the culture in the New-England Farmer of Dec. 23, 1840, we extract the following from a silk grower in the county of Franklin, Mass.

"One person fed 30,000 worms, consumed 1,200 lbs. of multicaulis leaves, and had 70 lbs. of cocoons; another fed 35,000 worms, consumed 1,327 lbs. leaves, and had 100 lbs. of cocoons; another fed 25,600 worms, consumed 817 lbs. leaves, and had 75 lbs. cocoons; another fed 45,000 worms with the white mulberry, (leaves not weighed,) and had 105 lbs. of cocoons; another fed 8,000 worms with multicaulis (leaves not weighed) and had 10½ lbs. of cocoons: *four pounds* of these last reeled *half a pound* of raw silk." It was the opinion of these feeders, and is that of many other persons who have tried the methods, that chopping the leaves for the worms in the feeding, promotes the health of the worms, prevents waste, and lessens the labor of feeding. It is also the mode followed by the Chinese in producing their silks.

The readers of the Cultivator for 1840, will remember that we gave some account of the manufactures of silk at Mt. Pleasant, Ohio, by Mr. G. W. Gill; and we are glad to see by an extract from a letter of that gentleman in the western papers, that his labors the past year have been eminently successful. Mr. Gill says, respecting his manufactures:

"We have increased our variety of goods. Our stock now consists of plain and figured Terry, English, Dutch and Genoa velvets; hat, tippet, and cap plush; Gros de Naples, and other dress silks; black corded aprons; Italian cravats, silk tassels, and silk lace, super silk hats, and super silk caps. Our stock of goods is large, and I can fill orders (accompanied by cash) on very reasonable terms." Mr. Gill purchases all good cocoons at $4 a bushel; keeps six looms in operation, and is confident the silk business must succeed in this country, and particularly in the great west. To command the above price, the cocoons must be killed by suffocation with camphor, sulphur, or charcoal; if killed by baking, the price is $3 per bushel; if the floss is taken off, the measure is level; but if not, the bushel is heaped.

From the evidence which is already before the public, it seems most probable that the failures which have been noticed, were rather the result of mismanagement of the eggs or the worms, than of any inherent difficulty in the business; and that when these obstacles are surmounted, as they may be by experience, there will be no more difficulty in growing a crop of silk, than one of potatoes, and the labor and expense will be far less.

Flour Trade of the Erie Canal in 1840.

We have condensed, from Governor Seward's Message, the following account of the flour and wheat trade on the canal for the last year. It is interesting as showing that the agriculture of the country west of Oneida, has sent to tide water through this channel alone, and in a single article, property to the amount of twelve millions of dollars. We are but just beginning to reap the benefits of the Erie canal, as the rich tribute which the Great West must eventually pour through this channel to the sea, has hardly yet began to flow:

Flour through the canal,..... 1,805,135 bbls.
Wheat through the canal,..... 1,395,195 bush.
Entered the canal from Lake Erie, 646,970 bbls. flour.
" " " " " 1,467,904 bu. wheat

The following will show at a glance the States from which the wheat and flour which entered the canal at Buffalo was derived, and the quantity from each. When we remember that it seems but a few years since some of these states or territories were first the abode of civilized men, and that but a single year has elapsed since one of them at least was obliged to import flour for the use of the first settlers, the transportation of flour produced by them the present year, can only be regarded as a specimen of what may be expected when the fertile west is peopled, its prairies converted into wheat fields, and the rapids of its beautiful rivers occupied as they soon will be by merchant mills:

Where produced.	Flour—bbls.	Wheat—bush.
Ohio,.....	505,262	725,025
Michigan,.....	112,215	97,249
Indiana,.....	13,726	48,279
Illinois,.....	2,259	10,634
Wisconsin,.....	166	

Mr. Coleman's Agricultural Addresses.

We have received from our respected friend, the Agricultural Commissioner of Massachusetts, a pamphlet containing the Addresses delivered by him the past year by invitation, before the three Agricultural Societies of New-Haven, New-London, and Hartford, in Connecticut. We find them to be, what indeed every one acquainted with the author would infer them to be, papers of the first order, abounding in excellent directions, interspersed with abundance of valuable facts, filled with an ardent love of country, and particularly of New England, and thoroughly imbued with that love for the great cause of agriculture, for which he has been so long and honorably conspicuous. Those Societies did honor to themselves in the choice they made of an individual to address them, and the confidence bestowed has been most honorably and satisfactorily redeemed. We shall hereafter have occasion often to avail ourselves of the facts here condensed and accumulated. For placing them in our possession, he has our unfeigned thanks.

Transactions of the N. Haven Ag. Society for 1840.

We have received from the publisher, Mr. Storrs of New-Haven, a phamphlet bearing the above title. It contains an address to the members by the President of the Society, Constitution, Officers, &c.; a list of the working cattle and other stock exhibited, premiums awarded, and farm reports. These last form an important and instructive part of the publication. The society of New-Haven county appear to be actuated by the right spirit, and we are confident they will find themselves much aided by the Farmer's Gazette, published in their beautiful city. We are also indebted to Geo. Sherman, Esq. for a second copy of the Transactions. We should be glad to receive No. 1

Legislative Aid to Agriculture.

THE important subject of state aid to agriculture we are glad to perceive is again agitated, and we hope a full expression of the will of the people will be given in the matter. If this is done, we have little fear the public voice will be disregarded. Aid is not asked as a boon; it is claimed as a right, and the man who looks at the sources from which the revenue of the state has been derived, will have little difficulty we think in coming to the conclusion that the claim of the farmer is well founded.

Different propositions are before the public, as to the way in which such aid, if granted, would be the most effectual. We think the influence of a *small* sum would be most felt in the establishment of a State Board of Agriculture, but if ten or twelve thousand dollars is granted annually, then its division among County Societies, according to the ratio of representation, to be used for premiums and nothing else, would we think produce the greatest good. It is not the amount received by the county society from the state, that is the great object; the sum secures the existence of the the society; it is a nucleus around which action and effort can be concentrated and directed, and which experience has proved produces the happiest results. An appropriation of twelve thousand dollars annually, would give us an efficient Board of Agriculture, one thousand dollars to be expended in premiums at the semi-annual meetings of the State Agricultural Society, and aid to the county societies at the rate of 50 dollars to each representative. We do not now, as we never have, advocate any appropriation of the money of the state, in such a way as to supersede the efforts of the county societies. No money should be paid to any society which had not actually raised for the use of the association, at least one half as much as it was entitled to receive from the state. We would not render individual or associated effort unnecessary; we would only by legislative aid encourage and direct it.

Let the farmers then speak out, and we are certain they will be heard. The great state of New-York will not refuse to the interest which, while most others are falling off, is fast increasing the golden stream it is pouring into the treasury, the few thousands required to give it renewed life and activity. It is demonstrated that the state must rely on her soil, and the true question for the legislature to consider is, how can its products be most effectually increased, and its resources most fully developed.

We learn with pleasure that the subject has already been taken up in the Legislature, a resolution having been passed, on motion of Mr. FULLER of Onondaga, instructing the Committee on Agriculture to inquire into the expediency of making an appropriation for the encouragement of Agriculture.

"State and Condition of Agriculture

In the United States, compared with Commerce, Trade and Manufactures."

UNDER this head, a correspondent (W. J. of Boston,) has addressed us some remarks on the causes of the low state of agriculture in this country, as compared with some other branches of national industry and business, which we are compelled to present in a condensed form.

The first cause assigned by our correspondent, is "The unproductive nature of this branch of industry, and the small returns of profit usually derived from capital invested in agriculture." This arises from the expenditure required to keep land in good condition, and from the high price of labor. From 4 to 6 cords of manure is deemed requisite, which is stated to cost, delivered on the ground, $6 per cord, or on an average, the cost of manuring an acre is $30. The expense of labor per acre on a farm is estimated at $6 per acre on the average, making the annual expenditure on each cropped acre, from $30 to $40. Our correspondent then estimates the average crop of potatoes at 150 bushels per acre; for corn 25 to 30 bushels, and other crops in about the same proportion. This is, in truth, rather a disheartening view of agriculture, and as the writer resides near the emporium of New-England, we think the high price of materials for enriching the soil there, has led to rather a too general application of his expenditure per acre. Under a skillful course of cropping, or an alternation of roots and grasses with grain, manures could scarcely fail to cost less than the price named, and the amount of product be greatly increased above the average named.

A second cause is, that "while the farmer is unable to realize more than 3 per cent on the capital invested, the profits derived from trade, commerce, and some branches of manufactures, have hitherto been much greater, varying from 10 per cent up to 20, 25 or even 33 per cent."

A part of our friend's statement is probably correct. Fortunes occasionally have been made much quicker by trade, manufactures or commerce, than by farming; but if it be true, as has been stated on good authority, that of those individuals who commence trade or engage in manufactures, three-fourths sooner or later become bankrupt, we must be permitted to think that a certain 3 per cent, (and this we think too low on well cultivated lands) is better than ten or fifteen per cent subject to such reverses or contingencies. Besides we have the authority of Mr. COLMAN, (and better cannot be had,) that "at present agricultural labor is as well paid as any kind of labor of the same description: perhaps all circumstances considered, better than any other, excepting where an expensive profession or trade has been learned."

It is true, as our correspondent asserts, "that the great profits which trade and commerce are *thought to afford*, have a direct tendency to draw our young men from the country to the cities, from agriculture to trade or speculations, as a more direct way to wealth and honor, an impression only to be corrected by inculcations of the truth, making honest industry honorable every where, and discouraging habits of luxurious and expensive living, to which all classes of people in this country are so prone."

For the cure of the evils indicated, we expect little aid from national or state legislative action. Improvident legislation frequently gives birth to evils that time only can cure. Our hope is on the people, the farmers themselves. Merchants will not import, foreigners will not deluge us with their trash, only as long as the people buy.

Comparative Value of Pigs for Cutting up.

THAT there is a very great difference in the value of pigs of equal weight, when fattened and killed, is known to every buyer and packer of pork, and should be well understood by every farmer. There are certain parts of a hog, such as the hams, lard and mess, much more valuable than other parts, such as the head and feet, and those hogs that give the greatest weight, where it is of the most value, other things being equal, are the best animals for both seller and buyer. Weight, however, without reference to the place where it is found, is generally the standard of value, and a hog that will weigh three or four hundred, even if one third of it is in the head and legs is by many considered first rate. A breed of hogs then having large hams, thick sides that lard well, with short necks, small heads, and slender legs and feet, is the one which is to be preferred, if there is sufficient weight of carcass and aptitude to fatten. Perhaps with an exception in a single point, that of weight, the Chinese hog comes nearer the standard of perfection than any other; and this defect in size, while the other valuable points have been retained, has been best corrected we think by the cross with the Berkshires. The great thickness of these hogs gives a weight of ham unequaled in any other, and their round capacious carcass furnishes ample room for lard, which experience shows is usually fully occupied. Many have been disappointed in killing Berkshire pigs, because they looked smooth and round when compared with the alligators, and it seems to have been supposed they they should weigh without feeding, as much as the latter after months of stuffing. No one has a right to expect this; the true point at issue is, which pig with the same food will make the most meat, and of the most valuable kind? and tried by this rule we have no fears for the Berkshire. Our pen of hogs this year consisted of five hogs of one of the best common breeds, and one Berkshire. The lot was from 18 to 24 months old, the Berkshire the oldest. They were none of them in high order when put up, and were fed wholly on steamed apples and potatoes, with the exception of about 20 bushels of screenings, refuse wheat and oats mixed together and ground. The average weight of the whole was 375 lbs. each; that of the Berkshire alone was 430 lbs. Several of the common pigs were longer than the Berkshire, but the weight in the latter was on the most valuable parts, and we have never seen a hog that exceeded him in the hams and lard, while the weight of the less valuable parts was proportionably less. They were fed little more than two months.

Since writing the above, we have been favored with a copy of the Report of the Committee on Swine, made to the Tompkins Co. Agricultural Society, in which are some very just remarks on the subject discussed above, and on the relative value of the several varieties of pigs now generally grown and fed in the country. From this report we make the following extract, as illustrating more fully the opinions we have expressed:

"The following experiment made by the chairman of this committee last December, in cutting up his pork, will show that the Berkshire pig cuts up well, and has less offal than other breeds in proportion to the valuable parts. The first example is a sow, common breed 2½ years old—had raised one litter of pigs in July and August, 1839. She weighed as follows in parcels, whole weight 235 lbs. The second is a half blood Berkshire sow 18 months old; had raised two litters of pigs; one in March and April, and the other in September and October, 1839—slaughtered in December. Whole weight 204 lbs. in parcels as below. The third example that we will give is a half blood Berkshire barrow, 18 months old, killed at the same time, and all fattened in the ordinary way, whole weight 336 lbs. In parcels as follows:

	No. 1.	No. 2.	No. 3.
Lard,	26	16	31
Hams,	32¼	31	52
Tenderloin,	5½	3¼	5
Feet,	8¼	6¾	9
Mess Pork,	96	103	176
Prime,	29¼	16	26
Head,	18	16	21
Spare Rib,	20	12	16
	235 lbs.	204 lbs.	336 lbs.

The following from the same report, is commendation strongly expressed, but we think facts will fully bear out the writer in his remarks:

"The Berkshire is a hardy hog, and a good feeder, and is as well adapted to consume the coarse food of the farm as any other breed; and it is believed they will make a greater return in flesh for the food they consume, than any other breed, except perhaps the China, and as large a return as they will. They are also remarkable quiet hogs, which is a very desirable quality with the farmer. They keep out of mischief, and save their flesh by their gentleness. Their skin is white when dressed and very thin. Their pork is firm and solid, and of the very best quality. Their hams are unrivaled; and possess a higher character, where known, than the ham of any other breed of hogs in existence."

Agricultural Soiree.

WHERE is the farmer in our country, who would not be glad of the privilege of setting down, and spending an evening in the society of such men as ALLEN, BEMENT, GARNETT, HOWARD, JEWETT, ROTCH, RANDALL, ROBINSON, and numbers of others of the most skillful, scientific and practical farmers of the country, and listening to the instructive results of their experience?—and would not the pleasure be greatly increased, if the same rational enjoyment was to be monthly placed within their reach, the meetings to include, within the course of the year, besides the gentlemen above named, some two or three hundred of the most able and influential farmers of the Union.

In such a meeting, which may with propriety be termed an 'agricultural soiree,' every subscriber to the CULTIVATOR will be a welcome participator, and a partaker of the benefits. Through our columns we shall monthly convey to our friends, the collected wisdom and experience of some thirty or forty of our ablest agriculturists, men who have done the most to advance the cause of improved husbandry, and as a necessary result increase the wealth and prosperity of the nation. To soirees of this kind, we invite the farmers of our country to be present by thousands. Our rooms are open, and the year has opened upon us most prosperously. None of the thousands who have favored us with a call have been dissatisfied, and we trust the thousands we are yet to meet, will have equal cause for satisfaction.

Young Men's Agricultural Society of Dutchess.

OLD Dutchess, by the skill and enterprise of her farmers, the excellence of her soil when properly cultivated, the promptitude with which the leading farmers have adopted obvious improvements in husbandry, and the means they have made use of by a liberal circulation of Agricultural papers, and by associated effort, has obtained the honorable distinction of the Pattern County of New-York. She seems, however, to be aware that this distinction can be only retained by a diligent use of the same means and effort that acquired it, as both in the east and the west other counties are following her steps closely, counties for which nature has done as much or more than for her, but for which the farmers have done as yet far less; and we have accordingly the notice of the formation of the "Young Men's Society of Eastern Dutchess," the spirited resolutions adopted, and a copy of the well written and appropriate address delivered before the Society by the President, EDWARD MERRITT, has been forwarded us. All this indicates the right feeling. It shows that the farmers of Dutchess are not content with having done well; it proves they mean to do still better. Let other counties and sections of our country imitate their example.

USEFUL RECIPES.

TO CURE POISONED LAMBS.—I send you a recipe to cure lambs when poisoned with *Withey*, so called here. It grows on low lands, about one foot high, and is green the year round. To half a pound of black tea, put one quart of water, boil it until you get the strength of the tea, sweeten with molasses, and give two table spoonfuls at a time. One dose is in most cases sufficient.

Great Falls, N. H., Dec. 1840. ISAAC CHANDLER.

TO COLOR MADDER RED.—For 10 lbs. flannel or yarn, take ¾ths lb. cream tartar and ¾ths lb. alum—pound them fine and boil 15 minutes in sufficient rain water—then add a little cold water and put in your cloth and boil it 3 hours, stirring it often—take it out and air it well, throw away your alum water—put in a sufficient quantity of water so as not to crowd your cloth; then put in 3 lbs. madder, and heat it over a moderate fire as hot as you can bear your hand in; then put in your cloth and keep it stirring 3 hours at the same heat. Then take out your cloth and add 2 quarts of soap and stir it up well, put in your cloth for 20 minutes, and then it is ready for scouring. The cloth or yarn should be well washed and put in the alum water while wet. The cost will be but 6 cents per yard. J. PARKER, JR.

FOR BOTS IN HORSES.—A junk bottle full of strong sage tea, made very sweet with molasses. Two or three doses is generally sufficient for a cure.

Trenton, N. Y. Jan. 4, 1841. J. PARKER, JR.

CURE FOR BLOATED CATTLE.—In the month of August last, I discovered that a yearling of mine was very much bloated, groaning at every breath. After cutting off the end of her tail, I boiled a strong dose of thoroughwort with a little tansey, poured it down as soon as it was cool enough, and on application of the first bottle, it started the wind. I gave the second, then turned the animal into the yard, and drove it about a few moments, when the bloat disappeared and the groaning subsided.

New-Haven, Vt. 12 *mo.* 1840. A. M.

WORK FOR THE MONTH.

Look well to Your Stock.

FEBRUARY is a trying month for your animals, therefore look to them well. It is altogether easier to keep an animal from becoming 'spring poor,' than to raise him after he has sunk to that point. Sheep and calves are usually the first to exhibit the effects of our hard winters; and should therefore be well looked to. If you see any of your sheep declining to eat, lingering behind the others when fed, and exhibiting the other well known symptoms of decline, the animal should be separated at once from the others, and put on better and more nourishing food; if it remains with the others it is sure to perish, but with a little care may now be saved. Sheep are apt when they cannot come to ground, and do not receive plenty of salt and green food, such as turneps, potatoes or carrots, occasionally to become costive, have the stretches, as it is called from its prominent symptoms, and die. Roots and salt will prevent this, but if the disease appears, in its first stages a spoonfull of castor oil will generally effect a cure. A division or hospital for weak or diseased sheep is indispensable, and not to be overlooked by the sheep farmer. See that your calves, and indeed all your animals have salt frequently; next to good food and shelter, it is one of the surest preventives of disease.

Settlement of Accounts.

THE winter is a capital time to look over your accounts, reckon with your neighbors and your mechanics, and make a thorough settlement for the year. The farmer should on no account, deviate from the practice of annual settlements with all he has dealings with. If there is money due him he needs it; if he is indebted to others, let him pay them, or at least let a settlement be made. Many disturbances arise among neighbors from a neglect of this rule. Accounts run for years; things are forgotton or misunderstood, and when at last reckoning comes, all is uncertainty and contention. Pay your debts, and settle all your accounts annually, and you will get through the world much easier than if you neglect these points.

"Keep the Door Shut!"

Is an admonition that in these days of frost and snow needs to be frequently repeated. There is undoubtedly a great pleasure felt by children, and we may add by those who are older, in seeing their way clear into the house, when compelled to go into the wintry air; but such do not remember, that every such leaving the door open, will require at least one or two sticks of wood in the stove, to raise the room to its former temperature. A little oil applied to the hinges of a door will greatly facilitate its movements, and prevent the wailings which some farmer's doors send forth whenever opened or shut. Dante makes the heavy doors of his 'Inferno,' as they move on their massive hinges, to "grate harsh thunder;" but such an example we think is more honored in the breach than in the observance.

Examine your Implements.

IT is well in this month to make a careful examination of your farming implements; ascertain what are wanting, what new repairs, what new ones are to be introduced, &c. that all may be ready when required for use. It is not good policy when the seed is sown, to find you must wait until a harrow can be constructed or your neighbor has done using his, before you can cover it; or when you are ready to plant or mow, to find that you have hoes without handles and broken snaths to your sythes. All are more or less dependent, but the practice of borrowing agricultural implements should be discountenanced as much as possible, since they are all so cheap that where they are wanted frequently, the old adage, that it is better to borrow than to buy, is fully reversed.

Destroy Lice on Animals.

IT is very probable that about this time some farmers who winter their cattle on straw, and trust for shelter to the leeward side of a fence, will find some of their cattle falling away, particularly the young ones, and it may be well to examine them, to see whether there are not lice about them. If any are found, take some mercurial ointment, or *unguentum*, and parting the hair around the neck, apply the ointment to the skin, so as to completely encircle it with a strip of the application. Some prefer filling a string with the ointment, and tying this around the neck closely. In using such mercurial preparations, they should never be applied in places where cattle can reach them with their own tongues, or be liable to be licked off by others.

Preparation of Hot Beds.

Those who have hot beds, or are intending to provide one for themselves, (and we advise every farmer, or mechanic, who has a garden, to construct one,) should now see that his sashes are made and his frame for their reception provided. Arrangements should also be made for a sufficient supply of horse manure for the heating process. Farmers who use abundance of litter in their stables, frequently find it in too great a proportion to the droppings to make good beds, as we have found by our own experience; and it is therefore necessary that the quality of the manure intended to be used, should now be seen to. We can assure our friends, that the successive crops of radishes, lettuces, and cucumbers, that may be brought forward in a forcing bed, long before they can be produced in the open air, will be found most acceptable after our long winters.

Collection of Cions for Grafting.

Grafts or cions may be cut the latter part of this month, and preserved until wanted for setting. Where circumstances admit, it is better to omit cutting the grafts until March, as the later they can remain without the circulation of the sap commencing in them, the more likely they will be to succeed when set; still, as the winter offers great facilities for transmitting them uninjured, from one part of the country to another, it should be improved, only using great care to prevent the cions from becoming dry before they are wanted. There is more attention paid to the propagation of good fruit than there used to be; but much less now, than there should be where the difference in the profit as well as pleasure, in growing good apples over poor ones is taken into consideration.

Examine your Wheat Fields.

When the snow is off from your wheat fields during the month, it is well to examine their condition, and see that the water furrows, which are necessary on almost every field, are not choked up, and the water they should carry off spread over the wheat. Nothing is more destructive to young grain than standing water; and there are many of the grasses, and the chess plant in particular, that will survive a submersion fatal to wheat or barley. See then that no water is allowed to accumulate on your wheat fields.

To do Good and Communicate, Forget not.

Every farmer should remember that he is under obligation to add something to the common stock of agricultural knowledge, by communicating the results of his experiments, or his experience, for the benefit of others. The winter season is the time for this work. The farmer, during the summer months, or the months for field labor, usually has so much on his hands that he can find but little time to use the pen. Now is the time then for him to give the results of his practice, or his experiments in husbandry. The hints, brief as they may be, can scarcely fail of being useful; "and he who has skill enough to practice experiments, is able to state it so that another can comprehend it."

ANSWERS TO INQUIRIES, &c.

Preservation of Timber.

MESSRS. GAYLORD & TUCKER—Answers to the following questions are solicited through the Cultivator. What is the best method of preserving the sills of buildings? Can salt be beneficially applied for that purpose? How should it be applied, and in what quantity? What kind of timber is most durable, when thus prepared? Can any other substance be applied to timber to preserve it? Answers to the above inquiries, and any information relating to the subject embraced in them, would be thankfully received. H. JANES.

Cornwall, Vt.

As to the use of salt in the preservation of timber, we think some of our friends at Salina or Syracuse might give us information that would be satisfactory, as it has been somewhat extensively used in that vicinity for that purpose; and we would thank any of them that would furnish us with replies on this point, to our correspondent. In ordinary cases, timber kept perfectly dry may be said to be indestructible; and the best method of laying sills would be the one which should secure this object most effectually. Timber perishes soonest where it is alternately wet and dry, and no water should ever be allowed to touch the timbers of a building if it can be avoided. Dry rot is at times very destructive to timber, but it is found that impregnating it with corrosive sublimate will destroy or prevent this disease of wood. Of all American timber used for building, good white oak is the best and most durable.

To prevent Hogs from Rooting.

GEORGE H. CHRISMAN, of Harrisonburgh, Va., says, "I find my hogs are seriously injuring my farm by rooting out the grasses, and rooting the soil where it is wet; and I am anxious to learn if there be any effectual method to check their depredation. I have tried putting rings through their noses, but from not knowing perhaps the proper mode of ringing them, the rings come out, so as to defeat my object. Is there any plan for making the rings so that they will remain in the nose? or will cutting the tendons of the rooter answer the purpose without injuring the hog?"

There can be little question that the pig, when wild, or in a state of nature, or when as Abernethy would say, he was obliged to live on a dozen ground nuts a day and root for them, found certain implements or appendages of great value, which, now that he has been "civilized," are more or less nuisances; and among others the half ossified rim of his nose is not the least troublesome. There are three methods of counteracting this innate propensity of the pig's nose to evil: ringing, paring, and cutting the tendons of the snout. Ringing is generally practiced, and if well performed, is effectual. Failures arise from making the rings too large, and using too small wire. If too large they will catch and tear out; if of small wire they will bend or break out. Rings of the size of a two shilling piece, or half a dollar, are large enough, and if the ends are properly bent, and the wire of the right kind, they will last as long as desired. Fatting hogs will do better for having rings, as it sensibly abates their pugnacious propensities, and ensures comparative quiet in the pen. Some catch their pigs, and with a keen knife pare off the rim of the nose, which frequently effects a remedy; certainly it will for a while. By examining the nose of a pig, it will be found there are two strong muscles running down the nose, and terminating in the rim. It is these muscles which give the power possessed by the pig's snout, and a separation of these (in the manner the tendons of a horse's tail are divided in the barbarous and unjustifiable practice of nicking) near their insertion in the rim, will render the nose harmless. On the whole however, we think ringing is preferable to either of the other modes.

Clearing and Improving New Land.

We give place to the following, in the hope that some of our many subscribers who are acquainted with the subjects alluded to, will furnish some papers of the description desired by our correspondent. If the settler of a new farm can be furnished with any useful hints towards the first clearing and cultivating of his land, they can scarcely fail of being acceptable to a large class of individuals. "*Canborough, U. C.* 1840.

"For myself, I can truly say, I have been delighted and instructed in the perusal of your valuable paper, and could you occasionally give us an article calculated to throw light upon the best methods of clearing land, and general subjects suitable to settlers in the bush, it would be still more highly popular and useful.

JOHN KIRK."

Hedges.

"I perceive in the last No. of the Cultivator, a notice of the native Buckthorn hedges becoming quite common in the vicinity of Boston and Salem. I was not before aware of there having been any successful experiments made in hedging with any of our native thorns. I should be pleased to see in the Cultivator (and many other subscribers, I presume, would be no less so,) a description of the variety of thorn used, sufficiently minute to enable one to understand who is not a botanist, and particularly the nurseryman's process of sprouting the haws or seed. *Collins, N. Y.* 1 *mo.* E. M."

It is rather difficult to describe a plant, not widely differing from a numerous class so as to have a person unacquainted with the botanical marks, detect them easily. The principal points in the Buckthorn, are its thorns, which are *terminal*, or growing on the ends of the branches or stems; its leaves which are *ovate* or egg shaped, instead of being lobed and irregular, and the edges are notched like a saw, or *serrated*. It is a rare tree in Western New-York, and to procure it, it would be necessary to purchase either the seeds or the sets from Salem or Boston. We do not find or know the mode of sprouting the haws, but presume it to be the same as that pursued with the other thorns, and with these the following mode has been successful. "Gather the leaves or berries, put them in a vessel with some water, and set them out doors, where they will freeze and thaw during the winter, and then, if planted in the spring, they generally come up. Without this management they are two years in sprouting, and many of the seeds never come up at all." Buckthorn plants may be obtained at Salem or Boston, at $2.50 per hundred, 22 plants being enough for a rod. The seed may be had at the same places, and perhaps elsewhere at about $1 a lb. At the present time, the Buckthorn bids fair to excel all other plants for hedges in this country; growing remarkably vigorous, and enduring the climate perfectly.

Furze for Hedges.

While on the subject of hedges, we would reply to our correspondent who signs himself an "Iowa Irishman," and who inquires "if there is any thing in the nature of our soils or climate incognate to this valuable plant, or which should prevent its use here as in England and Ireland for hedges?" that we have never known the cultivation of furze attempted in this country, but believe it is not sufficiently hardy to withstand the severity of our winters; another obstacle may be found in the greater dryness of our summers, which has hitherto prevented the growth of the English thorns generally, in the United States. That the west, especially in the prairie districts, must rely on hedges for fences, is evident, and we think experiments on the various kinds to ascertain those most suitable and certain of growth, should be instituted at once. Loudon remarks that furze hedges are usually grown on mounds or ridges thrown up from a ditch, on which the seed is sown.

Horse Rakes.

"MESSRS. EDITORS—Permit me to inquire whether the improvements on the common *Revolving Horse Rake* give it any advantage over the original one, on uneven grounds, and if so, to describe it through your paper sufficiently definite to enable an ordinary yankee mechanic to construct one, and oblige a number of your subscribers. *Redding, Ct.* HENRY SANFORD."

We know of no very essential improvements effected in the revolving horse rake over those figured in the last volume of the Cultivator; if any of our friends are making such as are considered superior in the points required by our correspondent, and will give us a description, we will publish it with great pleasure.

Mr. ELLIOTT's inquiry respecting corn planters, drills, &c., shall receive attention in the March No. of the Cultivator.

DICTIONARY OF TERMS

Used in Agriculture and its Kindred Sciences.

FAT. The oils and the fat of animals differ only in fluidity. At common temperatures the last are concrete or solid, while the former are fluid. The principal varieties of animal fat, are spermaceti and whale oils, butter, tallow, lard, and suet. Whale or train oil, is extracted from the blubber of the whale, and is originally solid fat. It is prepared by melting in large copper vessels. Spermaceti is the oily substance found in the head of a particular kind of whale, and is separated from the fibrous part by pressure. Whale oil is composed of carbon 65. oxygen 16. and hydrogen 15. Spermaceti contains of carbon 78. oxygen 10. and hydrogen 12. Butter is an animal oil or fat, and like the other oils is apt to become rancid by the absorption of oxygen. This is owing in a great measure to the fluids or buttermilk remaining in it; and the way to preserve it is to free it from buttermilk, exclude the air, and keep it at a low temperature. The name of tallow is usually given to the fat of cattle and sheep. That of pork, is called lard or suet. Strictly speaking, lard is the name of the fat of swine prepared by melting or *trying;* and suet is the pure or leaf fat which does not require this process. With farmers, however, the whole of the fat taken from the animal is usually submitted to the trying process, and is all called lard or suet indiscriminately. The animal oils are used for a variety of purposes, principally for burning, domestic cookery, and making soap. Animal fat is composed of two different substances called *stearine* and *elaine*, the former of the greatest consistence, the latter more fluid, and on the relative proportions of these, is in a great degree depending the texture of the substance. Fat is accumulated on animals by good feeding, rest, and quiet; and is of good quality only in those creatures that are in good health. The butter or the lard of a diseased animal, should always be rejected as unfit for domestic uses, particularly cookery.

FECUNDATION. This is that process of nature by which the germ of the animal or plant is vivified, or excited from the dormant state in which it would remain, to a progressive development of its peculiar form and organs. The fecundation of the germ or ovum in the animal is involved in obscurity; we only know that it is accomplished by the application of a fluid called the seminal fluid. Generally the organs of fecundation are confined to different animals, but in some, as in the snail, the organs of reproduction usually given to separate individuals, are found in the same animal. In the Batrachian reptiles, (frogs, lizards, &c.,) the ova are impregnated after their expulsion from the body; in all other cases, the fecundation is internal. All animals that produce their young from eggs, having a calcareous covering as birds, &c., are termed *Oviparous*. The eggs of the viper and salamander are never laid, but hatched in the body; such are termed *Ovoviviparous*. Animals which are not produced from an egg, properly so called, but which for a time remain attached to the interior of a cavity in the body of the parent, are termed *Viviparous*. Animals of the class of the Opossum and Kangaroo, are called *Marsupiala* as soon after fecundation, the young are received into a pouch, and nourished with milk by the parent. The fecundation of plants is accomplished in very different modes in the several classes. In one class the *Phanerogamous* plants, the whole of the double apparatus required for reproduction is contained in the *flower*. The fecundating organs are the *stamens*, placed near and usually parallel to the *pistil* or central column, which is terminated by a glandular organ called the *anther*. This organ furnishes a fine powder called the *pollen*, and this, received by the stigma, conveyed through the tube of the pistil, impregnates the seed by the fluid the powder contains. In some plants, as in Indian corn, the fecundating organs are on different parts of the same individual; and in a limited number of others, as the date, the reproductive organs, as in the higher classes of animals, are on separate individuals.

FEEDING. The preparation of cattle for the butcher is usually called feeding; while the same process with swine, is termed fattening. All animals delight in a change of food; and nature has supplied this variety in abundance; but in the domesticated state they are frequently confined to one kind of food; and in feeding, or fattening, this is most generally the case. Many experiments have been made to test the value of numerous kinds of food employed in feeding animals, both by analysis and by weighing, but the results have been very unsatisfactory, if not in some instances contradictory. This will be accounted for, when we remember that the quality of some species of food will often vary from 1 to 20 per cent in the course of an experiment: that different breeds acquire various proportions of flesh from equal quantities of the same food consumed by them; and that scarcely two individuals of the same breed can be found that will gain equal weights of flesh from equal quantities of the same kind of food. The value of any article for feeding, does not wholly depend on the quantity of nutriment it contains, but also on the nutriment being combined with some substance that shall properly distend and excite the stomach; and experience abundantly proves that the most nutritive foods are not the most healthy, or the best adapted to the animal system. In feeding animals it is necessary the supply of food should be abundant: that it should be given regularly: that there should be a sufficient variety to promote health, and that it should be so prepared as to lessen the labor of digestion as much as possible. The grinding or breaking of grain, the steaming of roots, and the cutting of straw, corn fodder, and even hay, has been proved useful on the above principle, and important on the score of actual saving in the expense of feeding.

FELDSPAR. With the exception perhaps of quartz, there is no mineral more widely diffused than feldspar. It is an essential ingredient in all the primitive rocks, is found in granite, gneiss, porphyries, greenstone, trap and other rocks, in lavas, and in most meteoric stones. The principal use to which feldspar has been converted in the arts is in the manufacture of china ware, of which it constitutes the principal and most important part. In China, this decomposed feldspar is called Kaolin. Beds of it are found in Saxony, in France, and in the United States. Unlike some of the other primitive rocks, the decomposition of feldspar aids in fertilizing the soil, a fact explained by its composition, which is nearly that of some of the best earths, the vegetable mold alone being wanting. According to the analysis of Vauquelin, 100 parts of feldspar contain 64 of silica, 20 of alumine, 14 of potash, and 2 of lime. There is reason to believe that were it necessary, the extraction of potash from this rock might be profitably pursued, and eventually we may derive this important salt from this source.

FENCES. Next to a good soil, good fences may be considered one of the most indispensable conditions of good farming. Without them the crop is never safe; cattle are sure to become unruly and troublesome; and neighbors too become vexed, and at last quarrelsome. In some countries, as in France, there are few or no enclosures. The inhabitants principally live in villages, and the animals of all kinds, are kept under the charge of individuals who prevent their injuring the crops. In England, stone walls and hedges are used for forming enclosures; and the last are so abundant, as to form one of the most prominent and beautiful features in the landscape. In the United States, rail fence of some kind is principally used; the most common being the post and rail, or the Virginia worm fence. The hedge fence is as yet scarcely known among us, and the attempts that have been made to introduce them, either owing to unskilfulness, the selection of improper materials, or the peculiar nature and dryness of our climate in the summer months, have not been very successful. It is probable, however, that these difficulties will eventually be surmounted, and hedges become common. At present, where stone can be procured suitable for wall, fences partly or wholly of this material are the best that can be made. A stone wall of five feet, is a better security against unruly animals than a rail fence of seven; and though generally costing more at first, is not unfrequently the cheapest in the end. Where stone for a whole wall cannot be had, a good fence is made by laying a wall of three feet, placing a rail on the top of this, then staking it, finishing with another rail.

FERMENTATION. The most active agent in the decomposition of vegetables and the production of mold, is fermentation. While life remains in the plant, the tendency to new combinations and chemical changes, is controlled; but when the vital principle is extinct, it becomes subject to the unrestrained influences of chemical affinity. The result of this is fermentation, which has been divided into four kinds;—the saccharine, the vinous, the acetic, and the putrefactive. The first produces sugar; the second, alcohol; the third vinegar; and the fourth, vegetable mold. It is with the last, therefore, that the farmer is principally interested; as on this process depends the advantages he derives from manures, from green crops used as dressings, and from the preparation of composts. As active agents of fertilization in the shape of gaseous matters are given off by vegetables during their fermentation, it is clear that this process should always be conducted with reference to this fact; and when it can be conducted beneath a covering of earth that will absorb the escaping gas, the earth becomes impregnated with these fertilizing agents, and is most valuable in increasing the crop to which it is applied. Fermentation goes on the most effectually between 70° and 100°; when it exceeds the last, the fermenting vegetable matter is injured, and its power of aiding vegetation seriously impaired. Those farmers, therefore, who are in the habit of piling their barn yard manures, should protect them with a covering of earth, to absorb the escaping gas, and if the heat in the fermentation rises above 100°, the pile should be opened and the ingredients mixed to retard the process.

FILTRATION. In agriculture, this term means the same as *leaching*, and is applied to that process by which the finest and most valuable parts of manures, sink below the reach of the roots of plants, and are thus partially lost to vegetation. It can only occur in very deep porous soils of sand or gravel, and from this property of thus swallowing up manures with little or no permanent benefit, such lands are in many parts of the country, known by the name of "hungry." This liability to infiltration is only injurious when the mass of porous sand or gravel is of great depth, as every farmer knows that a soil friable to the depth of some three feet, but based on a tenacious subsoil, constitutes one of the best soils in the world. But when the earth is porous to such a depth that every rain carries the soluble parts of applied manures beyond the reach of the plants cultivated, it becomes one of the worst soils to cultivate. The fact of filtration is of some consequence in connection with manures. That the soluble or most valuable parts of manures do descend to great depths, is proved beyond doubt by the analysis of earths taken from great depths; and on soils liable to filtration, the method of preventing it becomes a question of the first importance. The readiest, and perhaps the only way, is to combine with the porous earth, some other more dense and tenacious one, and which by having a greater affinity for water will prevent its descent with the manures it holds in solution beyond the reach of the plants. Clay here comes to the aid of the farmer; and many instances are on record where dressings of clay, or still better of clay marl, applied to sandy barren soils, have totally changed their character, given them the power of retaining moisture, and by imparting more firmness, prevented the sinking of manures. Soils so corrected, have proved capable of the highest state of cultivation, and in situations which will warrant the expense, prevention of filtration should receive the prompt attention of the husbandman.

FIRING. Where an inflammation occurs on the limbs of a horse which threatens to be of long continuance, or by the deposition of bony matter, produces permanent lameness, recourse is sometimes had to blisters; or where these are not easily applied, or are not efficacious, recourse is had to firing. The principle is the same as in blistering, namely, by creating an external inflammation and discharge, to cure and remove the internal one. It is performed with an iron heated nearly or quite to redness, which is passed more or less rapidly over the skin (which is first divested of the hair by shaving) until it is of a light brown color. Great care must be taken that the skin is not penetrated by the iron, which should be rounded and smooth. The horse, during the operation, must be fully secured by casting. It is recommended that a little lard or oil be rubbed over the part the day after the operation, as having a tendency to soften the skin, and render it less liable to crack or ulcerate. In order to derive the full benefit of firing, the horse must be kept from service some three or four months. The process of firing is most advantageous when performed in parallel lines over the diseased part.

FISTULA. This name is applied to certain sores on animals, most commonly on the horse, in which inflammation, resulting most usually from some injury, ends in suppuration and a deep seated ulcer, extremely difficult to heal.

Fistula of the eye is occasioned by the obstruction of the canal that conducts the water or tears used for cleaning the eye into the nose. This canal bursts, and the irritation of the tears produces a sore, which is man is only cured by the insertion and long wearing of a metal pin in the duct; and in the horse may be considered nearly incurable. Fortunately, this fistula is uncommon.

Fistula of the head or neck, called *poll evil*, is a serious disease, occasioned by injury from a blow, rubbing the manger, or pulling the halter. It is best treated by introducing a seton at the orifice of swelling, and following the canal or pipe to its source, bringing the seton out at the very lowest part, thus allowing the matter to escape readily. As the natural opening is usually at the upper part of the tumor, the matter is confined below, and corrodes the muscles, and finally causes caries of the bone; unless an opening is made for its escape from the lower part, in which case there is not commonly much difficulty in a cure.

Fistula of the withers, is usually caused by an ill constructed harness or saddle pressing on and bruising the withers or top of the shoulder. If the inflammation and swelling cannot be quickly dispersed, the suppuration should be hastened by poultices and stimulating embrocations, as the quicker the matter is formed, the less extensive will be the injury to the surrounding parts. When matter can be detected, a seton should be introduced, and passed from the top to the bottom of the tumor, so that the matter already formed, or that forms after opening, may be freely discharged. If neglected fistulous withers become the worst and most disgusting disease which afflicts the horse, and end by the bones becoming carious and the consequent death of the animal.

FLAIL. An instrument used for thrashing grain, and composed of two parts, the one held in the hands, called the staff, and the other used to give the blow, called the beater. The flail has been generally superseded by the thrashing machine; and where large quantities of grain are used, some aid in thrashing was indispensable, but we much question whether on small farms, and where labor is abundant, the flail may not still be used to advantage. Cattle are apt to fare better, where newly thrashed and sweet straw is daily flung out to them, and the yards and stalls littered with it, than when it is all thrashed at a time and stacked or piled in great masses to become weather beaten and rotten. We have made some calculations and experiments which show that so far as expense alone is concerned, an active man will thrash out four or five hundred bushels of the several kinds of grain, cheaper than it is usually done by machines. Where grain is to be sold, however, machines must be used, as wheat cannot be thrashed with the flail until cold weather, without much loss.

FLY WHEEL.—in mechanics is a wheel usually a heavy one, attached to the machinery, in which the power not wanted at one moment is accumulated to be used when required, and thus an even motion is secured. In thrashing, the cylinder itself performs the part of the fly wheel; attached to a circular saw, the power which would be lost in the intervals of cutting the wood is accumulated to act with more force; and its effect is seen in the straw cutters which turn with a crank or rotary movement, giving greater efficiency to the action of the knives

NOTES FOR THE MONTH.

THE NEW-ENGLAND FARMER.—Mr. COLMAN, who has been the principal contributor to the editorial department of this paper for a year or two past, having found it inconvenient to continue his assistance, Mr. BRECK, the publisher, has engaged the Rev. ALLEN PUTNAM, a well-known agriculturist and writer, to take the entire charge of the paper, and we doubt not that under his care the reputation and usefulness of this long established favorite with the agricultural public, will be well sustained.

"THE AGRICULTURIST."—We are gratified to learn that a union has been effected by the *Tennessee Farmer, Southern Cultivator* and *The Agriculturist*, the three very valuable journals heretofore published in Tennessee. All these papers were well conducted, and we believe received a respectable patronage. We cannot doubt, however, but the value of the united work, which is to be issued at Nashville under the title of "THE AGRICULTURIST," will be much enhanced to the subscribers, over either of the old ones. There will be a gain also in the matter of contributors. The man who devotes his occasional hour as a contributor to a public journal, wishes to do good and be read, and he feels more certain of this when the circulation is 10 or 20,000 than where it is only one 1 or 2,000.

THE UNION AGRICULTURIST.—This is the title of a monthly journal, recently established at Chicago, Illinois. It is published by the "Union Agricultural Society," an incorporated association embracing the counties of Cook, Dupage, Kane, Lasalle, McHenry and Will, and is edited by J. S. WRIGHT, Esq. the Corresponding Secretary. Its appearance is promising, and we doubt not it will prove worthy an extensive patronage, which we should hope the farmers of the west will be wise enough to extend to it. The object of the society is to bring into those counties improved breeds of stock—to purchase a farm for experimenting in agriculture—to effect the organization of County Agricultural Societies—to establish fairs and shows—to publish an agricultural paper, and generally to take such measures as may be deemed expedient to promote the interests of agriculture within their boundaries.

THE SOUTHERN AGRICULTURIST.—The publication of this work, which last year gave place to the Southern Cabinet, is to be resumed by J. D. LEGARE, its former editor, who we trust will receive the encouragement and patronage so justly due to such a publication, which we cannot doubt will prove an honor to the Palmetto state.

THE WESTERN FARMER is the title of a semi-monthly, the first number of which was issued at Detroit, last month, by JOSIAH SNOW, editor and publisher, at $1.00 a year.

THE SPIRIT OF THE TIMES.—This capital sporting journal is well sustained by its talented and indefatigable editor, W. T. PORTER, Esq. The number of the 9th January is accompanied by a splendid portrait on steel, of *Monarch*, a famous high-bred horse, owned by Gen. Wade Hampton, of South Carolina, who purchased him when a year old from the stud of William IV., for $1,300. He is now seven years old, and Gen. H. has several times been offered and refused $20,000! for him. He never lost a heat as a racer, but having received an injury in one of his feet, he has been withdrawn from the turf, and made his first season last year. He has been sent to Mr. CLAY, and will be kept next year near Lexington, Ky. The "Spirit" is published weekly at $10 a year.

THE TURF REGISTER.—A new volume (the 12th,) of this work commences with the present year. Each number is embellished with a steel plate engraving—the one for January representing a "Winter Scene on the Kaaters-Kills." It is edited by W. T. PORTER, Esq. the editor of the Spirit of the Times, and published monthly at $5 per annum, at No. 1, Barclay-st., New-York.

THE GARDEN.—Our thanks are due to ALEXANDER WALSH, Esq., that most indefatigable friend of Agriculture and rural improvement, for his ready compliance with our request in furnishing us with the plan of a garden which we publish this month. It is, with some few additions, but a plan and description of the beautiful and tastefully arranged garden adjoining his residence at Elm Place, Lansingburgh. Though few of our readers may wish to improve their gardens to the extent of the plan described by Mr. W., we think all who have any taste for rural decorations, will find in it more or less which they can appropriate to their use, as by having a suitable plan and arrangement, and every farmer should make one appropriate to his premises, whatever labor is bestowed, be it more or less, may be done in accordance with the general design, so that every additional tree, or shrub, or flower, that is planted, may show to advantage, though it be but a part of a whole view, which it may take years to complete.

POSTAGE.—Gentlemen who have occasion to write us on matters exclusively their own, are requested to "take particular notice," that hereafter no such letters will be attended to unless they come to us *free of postage*. We always cheerfully answer, either by letter or through the paper as the case may require, all inquiries addressed to us; but there seems to be no little injustice in taxing us with postage on letters which it frequently requires hours of labor to enable us to answer. Several letters the past month, remain unanswered for this cause.

A COW WORTH HAVING.—The Syracuse Western State Journal says, "Mr. Storrs Barrows, a little west of this village, on the railroad, is the owner of one of the most valuable cows in this county, if not the very best. She is a mixed breed—Durham and Leopard: and is now about eight years old. Last summer she produced over 21 lbs. of butter in one week, besides supplying the family with what milk was needed. Mr. B. brought us last week one of two rolls of nearly equal size, just made, which we found weighed 7 lbs. 14 oz.—being nearly 16 lbs. per week this winter. He has been offered $150, and refused the handsome sum. She is undoubtedly worth, taking all things into consideration, half a dozen common cows." As there is no such distinct breed as the "Leopard" known, this cow undoubtedly owes her milking properties to a fortunate cross of the Durham with some of the many varieties of our common stock. The celebrated Creampot breed of Col. Jacques had a similar origin.

DISEASE OF SWINE.—In the West and South, says the Farmer's Gazette, great losses have been sustained within a year or two by a disease which has not, so far as we have learned, yet appeared at the North. It is called "*the thumps*," from a violent internal action or beating, which destroys the animal in a few hours or days. It has been hitherto found very difficult, if not impossible to cure, when fully developed, but some experiments made by Dr. SHELBY, of Tennessee, would seem to hold out some hope that calomel may master the disease. The cases in which he had tried it proved successful.

GOOD DOCTRINE.—In the following extract, which we make from Mr. BIDDLE'S Address before the Philadelphia Agricultural Society, in October last, there is much truth and good sense. In these respects the great banker speaks like an experienced man:—"A farmer who has made any money spends it not in his business, but in some other occupation. He buys more land when he ought to buy more manure; or puts out his money in some joint stock company to convert sunshine into moonshine; or else he buys shares in some gold mine or lead mine. Rely upon it, our richest mine is the barnyard, and that whatever temptations stocks or shares may offer, the best investment for a farmer is *live stock* and *plow-shares*."

FINE HONEY.—Mr. CURTIS of Stratford, Conn. has been very successful in the management of bees, and in securing their honey without destroying them. In a communication to the Farmer's Gazette, he mentions that he prefers placing boxes on the top of the hive for the bees to fill, when the hive is replenished; and that last October, when the bees had descended forom the box to the hive, he took off one box containing 45 lbs. of virgin honey, and another swarm yielded 30 lbs. in the same way. This we think far preferable to the barbarous method of killing these laborers for the sake of the honey.

LARGE YIELD OF OATS.—Mr. KENT JARVIS, of Jefferson Co. N. Y. states in the Northern Journal, that he sowed 2¼ bushels of horse-mane oats on the 25th of May last, on 154 rods of ground, which was the previous year in potatoes, from which he harvested on the 8th of September, 123 bushels, being at the rate of 127 bushels to the acre.

SEWING SILK.—Mrs. Spann of Sumpter District, S. C. the past season, made from silk of her own raising, 25 lbs. of beautiful sewing silk; and this without any other instruction than what she derived from books and periodicals accessible to all. This amount was independent of floss, silk pierced cocoons, &c., amounting to a considerable quantity. Well may the Editor of the Farmer's Gazette remark, "Of one such daughter has South Carolina more reason to be proud, than of ten thousand, whose chief pride is to thumb the piano, or or skip across a dancing room."

PROTECTION TO THE FEET FROM FROST.—Capt. Parry, in his attempt to make a N. W. Passage, found great difficulty in keeping his men's feet from freezing while wearing boots or shoes; and he was obliged to substitute coverings made of the thick woolen blankets and cloths brought with them from Europe. With this covering of the feet his men would bear without injury an exposure, which with the best covering of leather would have frozen their extremities fatally. Those in our latitudes who are exposed to great cold may take a useful hint from these facts.

WESTERN PORK.—We find it stated in the western papers that up to the 10th of December, 150,000 hogs had been slaughtered at Cincinnati, and 40,000 at Louisville, making some 200,000 at these two places alone. Besides those killed at these markets, many hogs are packed at other places, so that it will not be extravagant to estimate the number killed for market this year at 300,000. At Cincinnati the increase in hogs killed over last year is more than one-half, and the western pork crop of 1840 has been very productive.

PEAS AMONG CORN.—Col. J. W. CLAY, contends that his pea crop is worth more this year, than his corn on the same land, and he informs us that his corn crop was this year very heavy. From our little experience in this matter, and what we have gleaned from others, we are satisfied that peas can be advantageously raised in every cornfield.—*Agriculturist*. It would unquestionably be better to raise a crop of peas among corn, than the enormous growth of weeds which many farmers allow to mature in their corn fields every year, but we should question whether with our close planting at the north, the crop of peas would counterbalance the injury the corn must receive. We hope some of our friends will make an experiment in the matter the coming season and report the results.

GOOD STOCK.—A full blooded bull calf of the Durham breed, owned by the publisher of the Western State Journal, Syracuse, was weighed on the 16th of January, when one year old, and his weight was *eight hundred and ninety-six pounds!*

A GOOD EXAMPLE.—The Macon Intelligencer states that at the late court term of Macon county, Georgia, one of the Judges, A. E. EARNEST, Esq. appeared in a *full suit of silk* (including coat, vest, pantaloons, stockings, pocket handkerchief, and stock,) produced and manufactured wholly and entirely in his own family. Judge E. is of the opinion that domestic silk will, before many years, be found the most economical article for negro clothing, as well as for ladies and gentlemen. When such examples become common, we shall have hopes of our country.

AMERICAN FLOUR MACHINERY.—We have gathered the following facts from the New-York Herald. In 1836—7, a quantity of wheat was sent from Trieste in Austria, to the United States, and when ground in our flouring mills, the quantity and quality of flour was found to be greatly increased over home ground wheat. As the wheat could not be sent to this country to be ground, it was determined to convey the American mills to Austria, and an agent from Trieste has just shipped the entire machinery, burr millstones and all, for a first rate flouring mill of eight run of stones, and a first rate millwright and miller go out to superintend the putting up of the machinery. We have no doubt the mill when put in operation will do honor to American mechanics.

AMERICAN PLOWS ABROAD.—American plows are becoming celebrated abroad, and if the various trials made at home and abroad of the power required to move them may be relied upon, they are superior in ease of draft and perfection of work to any others. Our plows have found their way to Russia, are creating a new era of agriculture in Turkey, are to be seen at the Agricultural Schools in France, and at the late meeting of the English Royal Agricultural Society, an American plow was exhibited which elicited the greatest admiration; and though not allowed to enter into competition with the English plows, was tried by many distinguished and noble persons, and pronounced a most superior implement.

WESTERN RESERVE (OHIO) FARMERS.—It is estimated that the Western Reserve dairies sell annually, cheese to the amount of a million and a half of dollars, besides large quantities of butter, and a great amount of beef and pork. To this must be added a surplus of a million bushels of wheat annually, and it will be seen that the farmers of such a district can scarcely fail of becoming independent. It must be remembered that New-England peopled the Ohio Reserve.

KEEPING BEES.—A correspondent of the Farmer's Gazette on the subject of keeping bees says—"Dig a hole about ten feet under ground, then put a layer of straw on the bottom, and then put down your hives on that; then bind straw round the hives, and throw in dirt even with the top; then put in another layer of straw on top, and fill it up with dirt. The bees in this way will not eat any honey during the winter, but will lie perfectly torpid, and as soon as they are taken out, about the first of May, they will go immediately to work." Such a method would only do in soils that are very porous and dry; as the access of water in any position would be fatal to bees.

TO CORRESPONDENTS.

The package about which "*L. B.*" of Hartford, inquires, was duly received, and we should with pleasure have given place to the extracts from the Connecticut Courant of 1817, could we have done it without excluding the original contributions with which we have been the year past so liberally supplied.

The *Meteorological Tables* from Leonardsville, N. Y. would occupy more space than we can spare for that purpose.

We will make room for "*B. S.*" on the study of Meteorology as soon as we can.

The correspondent who was so kind as to furnish us with the article on "*Epidemic among Cattle*," has our thanks.

It is our intention to avoid as far as possible the things to which objections are taken by *H. N.* of Putnam, O., and by *G. R.* of Monticello, Mo.

"*D. B.*" unquestionably owes the loss of his plums to the Curculio, an insect he will find described at p. 70, vol. 7, of this paper, to which he is also referred for a description of the best means of avoiding their depredations. We do not think the locust trees in his orchard could have injuriously affected his fruit.

We have some ten or a dozen communications on the *Rohan potato*, for the substance of which we shall try to find a place next month.

The favor of "*L. A. M.*" on Legislative Aid, was received too late for this month. It is difficult for us to make room for communications received after the 20th of the month, as we always have by that time, more than enough original contributions to fill our sheet.

We have some dozen or more communications filed for next month—among them are those of D. T., A WESTERN FARMER, R. SINCLAIR, Jr., S. W. JEWETT, S. B. SHAW, WM. PENN KINZER, L. A. M. and others.

New-York State Agricultural Society.

The annual meeting of the New-York State Agricultural Society, for the choice of officers, &c. will be held in Albany, on Wednesday, the 10th of February, 1841. The members will meet at the City Hotel at 11 o'clock, A. M.

WM. COOPER, Rec. Sec'y

COMMUNICATIONS.

"Those nations which have been most distinguished for their love of Husbandry, whether of the garden or the field, have been the most prosperous."

Remarks on Ornamental Gardening,

WITH A PLAN OF A FRUIT, FLOWER AND VEGETABLE GARDEN.

HORTICULTURE, after all that has been said and written, deservedly, in its commendation, is but an embraced department of the more enlarged science of Agriculture. It is the *great*, on a *reduced* scale: to a certain extent, it is the practical cyclopedia, as well as the model-farm of the agriculturist.

Alas, how few properly study, how few in our country through want of merited reflection, duly appreciate the value of the kitchen garden. It has not been so in all places or times; though necessarily imperfect, because, like mathematics, its utmost point of excellence seems forbidden to human attainment. Our great proto-father enjoyed in his first garden, a satisfaction denied to the most fortunate of his descendants, a happiness unattainable by his children; for the garden of Eden was made, not by human hands,—it was the work of GOD. When Adam was driven from his first home of indescribable bliss, he, by the labor of his hands and the sweat of his brow, made his little garden in other and less fruitful soil. In all times, and by all generations since, the hardy husbandman has had his garden. It is a matter of surprise, that while sciences of later birth have advanced almost to perfection, horticulture, perhaps the most necessary to man, has been comparatively so neglected and unimproved, and to our shame, so especially in this land of freedom. "Sat prata biberant," said the Mantuan bard, in allusion to the practice of irrigating land, which prevailed in Italy, near two thousand years ago, as a means of fertilizing the soil; yet how little is it at this day pursued, even in the land of Cincinnatus.

The inhabitants of Holland, proverbially industrious, have indeed almost made their country a garden; and to the application of irrigation, above all other causes, they owe that great abundance which is the almost invariable reward of great assiduity. The Hollanders have brought their industry to the land of their adoption, but they have left much of their skill at home.

In Britain, the attention of the people, is by the peculiarity of the general policy of that nation, much diverted from the cultivation of the soil, yet agriculture has not been much neglected there; and, so far as attended to, it has been honorable to the nation. Industry has been greatly aided by the application of scientific principles. In the application of these principles to horticulture, the Englishman has, in very many instances, approached a perfection worthy of the imitation, and still more of the rivalry of the American.

How happens it, that so little attention is given to Horticulture in the United States? The people are industrious; they are intelligent; and much is done for the promotion of science in its various departments; but it must be confessed, although it may cause a blush, that horticulture is shamefully neglected. True, every farm-house has as its adjunct, a kitchen garden; but what a garden? Would you walk through it? There is no walk there; or if there be, it is hidden by the crops, perhaps of vegetables, perhaps of weeds, or more probably, an unscemly commixture of both. Would you partake of some desired portion of its fruits, the chance is, you cannot reach it without trampling on some other fruit which you do not need. Over beds of earth carelessly piled up, seeds of various kinds are frequently thrown, as if the entire crop, like that of the field, were to be reaped during a single gathering time. Neither ornament nor convenience, nor even actual profit, seems to enter into this *garden without a plan*. The farmer acts as if he would not waste on the "*little patch*," the labor which would be more profitably employed in the wide extended meadow, or the large corn-field. Here rests the error. There is no other acre on the farm, which produces so large a return as that of the kitchen garden, nor is there any other acre on the farm, which will produce so large a return of profit in proportion to the labor and capital expended. The farmer instead of saying, "I am expending too much on this spot," might better say, "I am expending too little." The kitchen garden in truth, is the proper school of the Agriculturist. There he will learn the great value of properly prepared compost, without which his garden will produce a scanty crop; he will there learn that manure, in order to secure its utmost benefit, must be buried beneath the surface, and not thrown loosely on the surface; he will there learn the great value of irrigation. The principles of the kitchen garden, are in many instances applicable to the farm generally, and may often be adopted with great advantage.

A well furnished garden embraces the choice specimens of both nature and art, carefully selected and judiciously and harmoniously blended together—assisting nature to improve her own productions.

The amateur will not only collect from every quarter, the beauties of nature, and arrange them to the best advantage; but, calling to his aid the ornamental arts, he will heighten their effect by suitable displays of rural architecture—he will embellish his garden with jets and fountains,* and with appropriate specimens of sculpture; and the pencil of the artist will give delight to his evening walks with pleasing transparencies. He will also avail himself of the treasures of Conchology—"perhaps none but the department of Flora, can vie with this in variety, symmetry of form, and in richness of coloring."

The head of a family, if he cherishes the social virtues, will prefer his home to any other place. It is like a center of gravity to all his pleasures and attachments to life. If you see a good vegetable, flower and fruit garden, attached even to an otherwise humble cottage, there can scarcely be a doubt but that that cottage is the abode of happiness—that home is the most pleasing place to its occupant.

The God of nature paints the flowers of the field most exquisitely, and gives us powers to discover and admire their inimitable beauty. "Do you know," said the amiable Wilberforce, as he was sinking under the infirmities of old age, opening on some flowers shut up in a book, "Do you know that I am very fond of flowers?—the corn, and things of that kind, I look upon as the bounties of Providence—the flowers I look upon as his smile."

"Your voiceless lips, oh flowers! are living preachers,
Each cup a pulpit, and each leaf a book,
Supplying to my fancy numerous teachers
From loneliest nook!"

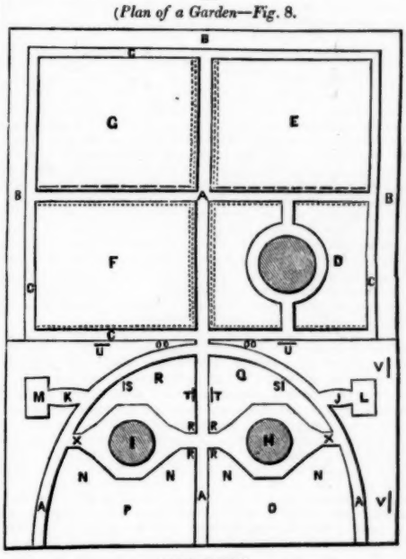
To conclude:—In gardening, as in all other subjects, a plan is necessary to success, and having been frequently solicited by Messrs. Cultivator, and by other friends in this and the adjacent counties for something of the kind, and considering this the proper season to commence preparatory operations, I herewith present a diagram and description of a garden, which, if it answers no other good purpose, may be the means of procuring a better from some other source.

Little has been published in our country on the subject of gardening as an art of design and taste; and the publications of Europe not being suitable to our wants, it is proper to make a beginning and devise that which may suit ourselves, our country, and our climate.

ALEXANDER WALSH.

Lansingburgh, February 1, 1841.

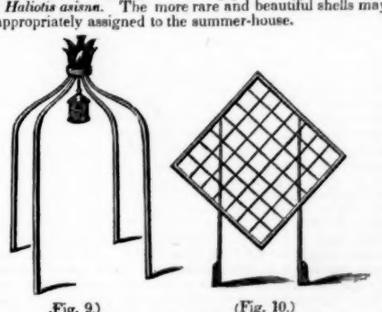
(Plan of a Garden—Fig. 8.



DESCRIPTION.

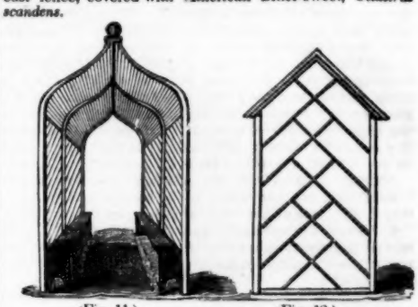
The garden and pleasure ground I would describe, is of an oblong form, 165 feet by 120 feet, with one end next the north side of the house, (fig. 8.) A walk 5 feet in width, A.A. of a semi-eliptical form, passes from the north hall door to the principal rear building on the west, extending in its course to the north 60 ft.; a walk of 5 ft. in width extends through the center from south to north, 153 ft. A.A. and is crossed at right angles by another of the same width 47 feet from the north edge of the elipsis; walks of 4 feet width C.C.C.C. surround the four squares. The walks graveled; formed rising at the centre to the height of the beds, with a descent each side, of an inch and a half to the border, which border is composed of bricks laid edgewise, the outer side flush with the soil, the inner side an inch and a half above the lowest part of the walk. H. and I. two mounds 12 feet diameter, 3 feet 6 inches high, enclosed by octagons, leaving a walk 4 feet in the narrowest part, with openings of 6 feet to the centre walk and elipsis; the mounds enclosed with brick, placed endwise, inclining to the centre, and sunk 3 inches in the ground; the enclosure filled with soil; each mound has growing in its centre, an evergreen tree. H. covered with evergreen periwinkle, *Vica minor*; and I. covered with variegated periwinkle, *Vica minor fl. alba.*

At the proper season, green-house plants, and also shells, will be prettily accommodated around the mounds; of the latter, I would recommend, *Strombus gigans*, *Triton variegatus*, and *Haliotis asinus*. The more rare and beautiful shells may be appropriately assigned to the summer-house.



(Fig. 9.) (Fig. 10.)

X. X. two seats, each occupying two feet—J. and K. passages leading to summer-house and green-house—L. summer-house—M. green-house. (Designs for summer-house and green-house, as also plans for ornamental gates, &c., in a future number.) N. N. N. N. four Grecian pedestals for urns, statues, and heavy mineral specimens—R. R. R. four small columns, 9 feet high, connected in the centre at the top, with a hook under the centre (fig 9,) for suspending a lamp or bird-cage—grapes trained over the frame—S. S. two fixtures for transparencies—T. T. two seats (fig. 11,) surrounded by an arched arbor 10 ft. high, thrown over the walk, ornamented on one side with honeysuckle, on the other by climbing Boursaut rose—U. U. two ornamental frames, the square 4 ft. 6 in. by 4 ft. 6 in. (fig. 10,) may be covered with a variety of our native clematis—V. V. two structures 9 feet high, and 3 feet six inches wide, (fig. 12,) 4 feet from east fence, covered with American Bitter-sweet, *Celastrus scandens.*



(Fig. 11.) (Fig. 12.)

The ground on the outside of the eliptical walk, east, a grass lawn, diversified with fruit and ornamental trees, commencing next the walk with the lowest shrub, and rising to the east in gradation to the largest tree. Many of our beautiful native flowers and shrubs are found to thrive under the shade and drip of lofty trees, and may here be planted in occasional groups.

The ground on the west side of the eliptical walk, grass lawn, shrubbery and filbert bushes, to the extreme west of the green-house.—O. & P. fruit and ornamental trees and native shrubs—R. native flowers—Q. tulips and late flowering exotic plants—O. O. diminutive rustic alcoves from thrifty growing plants of upright privet, *Ligustrum strictum*, formed by placing a platform of light boards two feet six inches from the ground, and three feet long, and one foot six inches wide, on the twigs of the privet; those in the centre of the platform to be trimmed off close to its under side, and those on the back and sides to be led up round the platform, entwined and arched; the door to be constructed from the twigs in front, and an opening left two feet six inches high, which is the height of the dome.

This described ornamental pleasure ground, containing some hundreds of trees and shrubs, possessing the color of green in common, yet differing in both the shape and shade of the leaf, add much to adorn this spot by their variegated moving foliage, light and shade.

D. E. F. and G. four principal compartments, each 43 feet 6 inches by 43 feet—D. has a circle in the centre 26 feet in diameter, a parterre for annual flowers; in the centre, a sun dial; a walk 4 feet wide surrounds the circle, and from it north and south; the residue of the ground D. allotted to Dahlias, &c.—E. F. and G. compartments for culinary vegetables, strawberries, and an occasional plum tree—B. B. B. outside borders 6 ft. wide for currants, gooseberries, raspberries, &c.; in the centre of the north border a small board supended, labelled, "*Waste not, want not*," near which bee-hives.— ..... borders for small flowers on the south and north side of D. and F. — — — — borders south side of E. and G. for foreign grape vines and herbaceous perennial flowering plants. On each side of centre walk, :::::::::::::::: trellis for native grape vines; posts 7 feet high with 5 rods of wire crossed at equal distance; at the southern extremity of trellis, a light arch, on the back or north side of which, may be inscribed, "*With clustered grapes He crowns the vine.*" At the northern extremity of trellis, an arbor thrown over the walk 12 feet long, more for ornament than use; grapes in our northern latitudes ripen better on the open trellis.

Candytuft, *Ibris umbelluta*, a good annual border flower; Dwarf Iris, *Iris pumila*, and yellow flowering stone crop, *Sedum aizon*, pretty biennial bordering.

On a subject embracing such variety, it is not best to be more minute on border or other plants, as the collection and selection of plants, and the invention of other ornamental decorations will afford amusement to the man of taste, and to him this pleasing occupation must be left.

"Oh sages! think on joy like this,
And where's your boast of apathy."

"American Society of Agriculture,"

"To elevate the character and standing of the cultivators of the American soil."

MESSRS. GAYLORD & TUCKER—My worthy friends—You and many of your readers, will recollect the article published in No. 3, vol. 5, May, 1838, upon this subject. It was designed to call the attention of the public to the subject, and Judge Buel, in a note says—"*Mr. Robinson's proposition meets our hearty approbation; and should it be favorably responded to by our cotemporaries who conduct agricultural journals, and whose opinions upon the subject we respectfully solicit,—we shall give it our cordial support,—and devise some means if others do not do it, to organize an association,*" for one of the noblest purposes ever devised, having in view the sole object "TO ELEVATE THE CHARACTER AND STANDING OF THE CULTIVATORS OF THE AMERICAN SOIL."

Well, so far as I am able to judge, the proposition met with an almost universal approbation. The article was extensively published in the papers of the country. The comments of many editors were highly flattering From the tone of the press, and numerous private letters, I felt strongly encouraged that this great beneficial project to this nation was about to be accomplished. I pictured to myself one of our happy meetings, when the friends of agricultural improvement from every State, county and principal town in the United States, should

* The subject of hydraulics in domestic economy, is but recently beginning to be developed in our country; but it is to be hoped that the great interest which every one must feel in possessing a supply of water, both for use and ornament, will awaken the attention of the public more extensively to the subject.

be joyfully interchanging heartfelt greetings with each other—not only exchanging sentiments, but valuable information, rare and curious productions of nature, and valuable seeds—storing up in our minds a fund of happiness for all our after life. But alas, that one year has gone, and another is fast going, and not one mighty spirit has stepped forward to say this thing *can*, this thing MUST, this thing SHALL, be done. Even the encouraging echoes that responded from all parts of the Union to the first proposition, have died away, until not one faint echo meets my ear. Shall I despair to wake them again, under such discouraging circumstances? No—I am well aware that the whole energy of the public mind, has lately been engrossed by another and exciting subject. But now there is a calm, there is room,—room to do good—and should I meet with one single echo to my second attempt to awake the public to the importance of this great proposition, that will some day assuredly shower blessings upon this agricultural nation, I shall not feel as though I had written in vain.

Messrs. Editors, let me reiterate my first text—"something *can*, something MUST, something SHALL," may I add, something *will* be done, and that speedily, "to elevate the character and standing of the cultivators of the American soil;" for such is the object and aim of the "American Society of Agriculture,"—"as I understand it." * * * *

An oasis in a desert! Not with greater pleasure did ever weary traveler over burning sands, meet with an oasis, a bright, green, shady spot, abounding in cool springs, than I met with the letter of that good old Virginian, in your last number, just as I had written thus far. His invocation shall not be entirely in vain—I will "once more sound my trumpet," and before the echoes die away, I will sound it again and again, until its blast shall wake up "all the true lovers of American Husbandry, to a cordial coöperation in the promotion of a project, which I verily believe, if once achieved, would become more and more popular with the American people, in all time to come."

How true it is, my worthy friends, that "the bonds of that cordial brotherhood which should forever unite us, would be strengthened, by annually bringing together the distant members of our great agricultural family." How much they have already been strengthened through the columns of agricultural papers. How does my heart yearn to take that good man by the hand whose letter I have just been reading, and am now commenting upon. There is no kinsman among my numerous clan, whom I would sooner meet, or from whom I should expect a warmer welcome, than from such a man, as his writings indicate JAMES M. GARNETT to be. If the perusal of a letter from a stranger produces such feelings, surely "our bonds of brotherhood would be strengthened," by a closer communion. This alone should be cause sufficient to encourage us to persevere in the formation of a National Society.

How to begin, is the only obstacle. I disagree with Mr. Garnett, about looking to members of Congress to make an organization; they never would do it. How then shall we begin? We need not wait for a farther expression of public sentiment; for as Mr. Garnett says, "the project received such high commendation throughout the country," it is evidence to my mind that the majority are in favor of its "speedy execution." Thus, then, let the *beginning* be. I will take the responsibility to order it, and you, gentlemen, must endorse it, or suggest a better one. You must name a committee of 20 of the most active friends of the cause in the vicinity of Albany, to meet at your office on that memorable day, the birth-day of Washington, to nominate the officers *pro. tem.* of the American Society of Agriculture; such committee *will not* fail to attend. Such men as they will nominate for officers, will not refuse to act. These officers, so far as may be convenient, by meeting, and otherwise by correspondence, will organize the Society. They will draft a "bond of union," and bye-laws for the orderly conducting meetings and uniting members. They will fix upon a time and place for the *first meeting*, and publish an invitation to all the friends of agriculture to meet. At that meeting, a constitution would be adopted, and officers elected.

The residence of the first officers is not important, so they are men who will lend their energies to put the ball in motion, for once in motion, it will never cease to roll. Each one should be immediately apprised by the nominating committee, of the appointments, and in his turn should accept the appointment, that it might be published. A small fund will be necessary to defray postage and printing expenses; and as soon as the treasurer is appointed, I shall forward ten dollars as a contribution, and I hope a few others will do likewise. If you, or any of your readers have aught to say against this plan of organization, say it now or never. But above all things, let my friends Gaylord & Tucker, bear the fact in mind, that the whole responsibility now rests upon them to make a beginning of the organization. Let them not shrink from the honorable responsibility with which I have autocratically invested them; but proceed at once to name and publish the names of the committee, including themselves.

When the officers are nominated, should they fail to perform their duty, they must expect to hear loud blasts from the trumpet of friend Garnett, and your most humble, though devoted friend of American agriculture.

SOLON ROBINSON.

Lake C. H. Ia. Dec. 27, 1840.

NOTE.—Information—Many persons having read my communications, have written to me private letters, and often taxed themselves with postage. To persons so disposed, I would say, that I do at present, and have for many years past, held the office of Post Master.

HORSES.

MESSRS. EDITORS—In this age of canals and rail-roads, the utility of the horse is materially diminished; and should the predictions of Mr. Biddle be verified, it will soon sink much lower, by the substitution of the steam engine for the horse, in field labor.* This may be a desideratum to the mere utilitarian, but I am ready to confess, that to *me*, the proposition is far from being a grateful one. Without being precisely a stickler for old habits and customs, against *all* innovation, I would nevertheless retain *some* of the ancient landmarks. I am willing to be whirled along over the rail-roads, and even to trust myself in a steam-boat, provided it is on our eastern waters. Apropos, will not coroner's juries begin to bring the verdict of "deliberate suicide" against all wayfarers blown up, scalded to death, or drowned, by the explosion of steam-boat boilers on our western rivers? I would not object to the performance of our chopping by steam, as Mr. Biddle further suggests; and should it see fit to pull flax, dig potatoes, weed turneps, clean out cattle stables in the winter, and do up various other such little "chores," why let it!—but do our plowing—supersede our horses? Never, say I!

What pleasanter picture does the whole round of rural avocations present us, than that of the farmer driving his sleek bays to the field on a bright spring morning, fastening them before a No. 5, whose mold-board gleams like burnished silver, and then turning those long straight furrows, which one cannot help fancying yield better crops than crooked ones! The air is soft and fragrant around him; the ground bird and sparrow hop about, peering down into the furrows with curious little eyes, after their insect prey; while the bobolink, shooting up suddenly over his head, comes fluttering down, overcome (as unfeathered musicians sometimes are,) with ecstacy, at his own tinkling minstrelsy. While the eye and the hand of the plowman almost mechanically guide his implement, his thoughts wander "wheresoever they wilt." His business, his pleasure, meditation, or even study, may engross his thoughts—but one thing I'll warrant you, that ever and anon he casteth a look of peculiar complacency upon those glossy and powerful beasts, which with arched necks, springing step, and an occasional playful uptoss of the head, are hurrying the plow around the receding "land!" Compare all this with a great n——y machine traversing our fields, puffing out clouds of pitchy smoke, stifling the vernal fragrance with the rank odors of greasy machinery; and in the place of the quiet contemplations of the plowman, the creaking of wheels and rollers, the fume, fret, and hurry of men and boys. Poh! what a contrast!

But in sober seriousness, who would like to see the horse banished from our operations of husbandry? Who that has once enjoyed the privilege, nay luxury, would like to be deprived of the command of one of these noble animals, to bear him fleetly or slowly, whensoever and wheresoever he listed to go? If you can find one such man, I envy neither his taste nor his judgment. Yet while all admire the horse, who is there in this country, with now and then an exception, who bestows any care on his breeding and improvement? We have companies formed to import Short Horn cattle; hogs and sheep of every variety are constantly arriving. The most unwearied pains are bestowed on their improvement; newspapers are filled with controversies on the subject; and we have essays written to prove how many white feet, and how many white hairs in the end of the tail, marks the genuine Berkshire porker! Not a word however on the subject of horses—nor is this the worst of it—there are not a dozen good stallions in the State, except of the Arabian or racing variety. The thorough bred horse is a beautiful animal; and crosses with this blood produce the most spirited, active, and enduring saddle horses. Puckler Muskau says of an English hunter, I have galloped him for four hours over hill and valley, and yet he continues to move on like a machine of steel, and not a bead of sweat has started from his hide! The hunter is a cross with the Arabian. But are not the mongrels between the blood horse and our common American mares, a little inclined to be vicious? I do not assert it, but my observation goes to establish the fact. I have known many capital roadsters of this cross, but a large proportion of them were of a wild and irreclaimable temper. I well recollect one, owned in our family, which no human arm could quell. Many a bold fellow bestrode him; some were projected aloft like rockets; some were hurled forward like a bolt from an arbalist; others shot off rearward and sideways in all sorts of tangents—*all* were brought to an embrace more violent than loving, with their mother earth. Another difficulty has followed the blood horse and all of his crosses, so far as my observation has extended, viz. *contracted feet*; and sooner or later it ruins or greatly impairs his value. What can be more painful than to witness a noble horse in his full strength and vigor, crippled by this incurable disease. Expanding shoes, standing in clay, a run at grass, and various other expedients have been resorted to; they may palliate or remove the difficulty for a time, but it returns.

Besides, there are few blood horses with sufficient size and bone, to produce those large, showy, sixteen hand horses, which in a country where the carriage is so generally preferred to the saddle, will always be the favorites. The farmer also wants a horse large enough for field labor. A pair of them should be able to break up green sward—not on the loose sands around Albany—but on our tenacious western soils: and do it without that violent effort, that wear and tear, which always accompanies the performance of what is termed a "smart little" team. They also should possess activity—for marketing, milling, going to church, and "traveling," call the horses of our independent farmers, during portions of the year, as often on to the road, as into the field. That a cross with large and comparatively speaking, heavy boned blood horses would be far preferable to the common practice of breeding dunghills, not one in five of which makes a horse fit for the carriage, the saddle, or for farm work, I freely admit. But is there no variety not subject to the defects of the Arabian, and which possess his fire and activity? What were the trotting family of Bellfounder horses? Report speaks of a splendid animal of this variety, which is or has been in Buffalo.* Were they in part, or wholly of the Arab stock? How did they, or more particularly Mr. Allen's horse, cross with good common mares?

Some have recommended the heavy English dray or cart horse. I am inclined to think he would not prove sufficiently a beast of all work for the farmer; and for the carriage or saddle, one would as soon think of driving or bestriding a Rhinoceros! Good for slow and powerful draft, he is but a snail on the road; and he is a terrible consumer of hay and provender! Two such horses will consume as much as four mules, and they cannot do so much labor. The mule is quite as fleet too, on the road, as the dray.

I would ask if there are any well bred Cleveland Bays in this country? It strikes me they would be precisely the animal wanted. They have size, style, endurance, and are excellent roadsters. What say our breeders of valuable horses? What says *Ulmus*? Myself and many others would be glad of his opinion. Yours truly, H. S. R.

Cortlandville, Jan. 1841.

* Address of Nicholas Biddle, Esq., before the Philadelphia Agricultural Society

RESULTS OF EXPERIMENTS.

Sommeiller Potato, Whittemore Pea, &c.

MESSRS. EDITORS—I believe I partly promised last spring on the receipt of the package of seeds, &c. from you, that when the season of cultivation was closed, I would communicate to you the result of the experiment; and I now sit down to fulfil partially at least, my engagement. And

1st. THE SIBERIAN KALE OR COW PARSNEP.—Part of the few seeds I received from you, I sowed in an open border of rich light earth, and part in a forcing bed; but not a single seed vegetated that I was able to discover. I regretted this, for though I had not formed high expectations of the plant, as one suitable to our climate and modes of culture, I was anxious to give it a fair trial.

2d. THE GIANT RHUBARB OR PIE PLANT.—These I distributed among several of my friends, in order to multiply the chances of success in their propagation, reserving enough to seed a few rows in the open garden, as well as in the forcing bed. Several of these seeds vegetated, and are now thriving plants. Among those I distributed, some succeeded, but many failed. The Pie plant is an excellent vegetable, and well worthy of cultivation in every garden; though not perhaps of quite as much consequence among farmers who have or may have fresh apples for pies, nearly or quite through the whole year, as to the city gardener; and I hope the kind produced from these seeds will prove a good variety. I should think it rather questionable however, whether plants from seeds would be invariably like the original stock, the experiments of Loudon and Knight, proving that the Rhubarb is subject to the same laws of improvement or deterioration by crossing, that govern most other plants. Last spring as soon as the snow was off, I placed empty barrels of which one head was out, over some of my rhubarb plants, and around these, piled fresh horse stable manure as high as the barrels. The plants gave a succession of fine stems for cooking, very tender, and much earlier than those not so treated.

3d. THE WHITTEMORE PEA.—Of the few seeds of this newly imported pea I received from you, I sowed one row of some 30 feet in length in my garden, and the remainder in drills in the field. Those in the garden I bushed at the usual time. They grew very tall, but did not blossom early or freely. The Washington pea was ripened before a mess could be gathered from those in the garden; and when cooked, those who tasted them did not consider them equal in richness and flavor to the Marrowfat, and they were much inferior to that pea in size. There was one thing however, decidedly in their favor; there were no worms or bugs in them. As they came recommended for the field, rather than the garden, I still hoped to be able to give a good account of those drilled in the field; but they continued to grow and blossom sparingly through the whole season, and at this time (Oct. 14th,) show no symptoms of ripening. I have therefore come to the conclusion they are not adapted to our use as a field pea, since the pea with us usually precedes wheat, and must ripen so as to be removed from the field in season for seeding for that important crop.

4th. THE SOMMEILLER POTATO.—This new variety of the potato, of which a very few were introduced into this country last winter from France, is a seedling resembling the Rohan very much in its general appearance except that it is more rounded, has fewer eyes, and those not so deeply indented. Some of those I have grown however, in color, shape, eyes, and every point, so closely resemble the Rohan, that placed side by side, would with difficulty be distinguished. The potato I received from you, had become so dried and bruised in its passage from France, that of the twenty-one sets, one eye each, into which I carefully divided it, and which weighed between eight and nine ounces, only eleven grew. These twenty-one sets I planted in a row across a rich part of my garden, one eye in a hill, and about two feet distant from each other, in the row. As an object of comparison, I took at the same time a Rohan potato, and cut from it the same number of eyes, which I planted in a parallel row, at the distance of three feet from the Sommeiller. Of these every set grew, and from the first with manifestly the greatest vigor, as the sets were fresh and uninjured. I gathered these potatoes on the 11th instant, the tops still green, and took from the row planted by the Sommeillers forty-seven pounds of potatoes; and from the row planted with the Rohans, one hundred and twenty-four pounds. The sets of the Rohan took about two-thirds of a potato, and weighed between nine and ten ounces. When it is remembered that but half of the Sommeiller sets grew, and some of these owing to their damaged condition, but barely survived, the yield must be considered a good one. In size they were not as uniform as the Rohans; but the largest weighed three pounds two ounces. The yield of the Rohans must be considered an extraordinary one, quite equal to any on record. When cooked, the Sommeiller in taste, smell, and appearance, would hardly be distinguished from the Rohan; it is perhaps a little more farinaceous or mealy, and a shade whiter; and I have come to the conclusion that the seedling was produced from a cross of the Rohan with a variety rounder in form, a less deeply indented surface, and perhaps a little preferable for the table. Next year I shall be able to give the new potato a much fairer trial, than from the circumstances named, it could this year receive.

As the potato is in many respects one of the important crops grown by the farmer, I will add a few remarks on their culti-

* Owned by Lewis F. Allen, Esq

vation and their produce the present season. In this town, this year, where the soil is very uniform in quality, some very extraordinary crops have been grown, while others have proved as great a failure This may in part be attributed to the season, which at the best time for the growth of potatoes was quite dry and hot, and in part to the mode of planting. For instance, one of my neighbors planted on land very heavily manured two years since, and of course that and the soil was fully incorporated. As the land had a tenacious subsoil, and was liable to suffer from wet, he threw his potato ground into ridges and planted on these. From an acre and a half he has dug nearly six hundred bushels of most beautiful potatoes. On the farm adjoining, the owner prepared his ground, which was in good condition, and gave it a heavy manuring in the hill at planting. His potatoes have yielded scarcely one hundred bushels to the acre, and are small and inferior. In this case the extra dung applied to the hill evidently had a bad effect, by increasing the injurious effect of the drouth. My land received no manure this season, but was very well manured last year. Naturally heavy, it was thrown into ridges, and on these the potatoes were planted. The crop was a very fine one, though not equal to some others.

I have long been convinced that an occasional "recurrence to first principles" is as necessary in the cultivation and perfection of plants, as in any thing else. Production from seed is the original law of nature; and though the potato can be propagated for an indefinite length of time from the tubers, I think there is abundant evidence to prove that the variety will eventually become exhausted, show more and more a tendency to produce blossoms and seeds, grow more and more liable to disease, and finally become unfit for cultivation. My experience this summer has had a tendency to strengthen these opinions. Last spring my Rohans were planted with Pink eyes on each side of them. The soil, the planting, and the treatment was in every respect the same. The pink eyes early showed a disposition to dry up; some few hills were attacked by the disease called the *curl*, and blossoms were every where abundant. On the contrary the Rohans were very vigorous, not a stalk dried in the piece planted, there was no disease, not a blossom in the field, and from about half a bushel planted, I dug fifty bushels, while the pink eyes gave but a very poor yield. I have noticed the same facts in regard to blossoms in most of our oldest varieties, and consider it a hint thrown out by nature herself, that it would be wise at once to adopt the simple and original law of producing potatoes from seed. The necessity and propriety of this course is seen in the astonishing vigor and strength of shoots from these new seedling varieties the Rohan and the Sommeiller. As a mere matter of curiosity I examined some of the vines I pulled from the Rohans I planted in the garden. From one of these sets, not larger than a dollar, a shoot had grown an inch in diameter, and which at the distance of three feet from the surface of the earth, had subdivided into thirty-four parts or vines, many of which were over six feet in length; and the whole of which would not have measured less than one hundred and sixty or seventy feet; and in the row there were many others, scarcely if at all, inferior.

For several years past I have found much difficulty in raising good melons, that is, in getting them forward so early as to ensure them perfect growth and ripening, but this year have succeeded in growing some very fine ones. My forcing frame or bed was made by placing a box of boards 5 feet by 8, and 18 inches high, on the ground of the garden, and piling into this to the depth of three feet, good horse stable manure. When the mass had settled together, but before it had begun to heat to any extent, a second box, half a foot smaller each way, and of nearly the same height, was placed on the manure, and within this last, the surface was made level, and then filled to the surface nearly, with good garden mold. The sashes of an old window in their former frame were fitted to the top of this box, the whole having an inclination to the south, to give it the advantage of the sun. The fixture was rather an awkward one, but my hot bed was fully occupied, and this was the best, circumstances permitted. In this I brought forward quite a variety of plants for early setting besides those before alluded to, and when so late that I thought the plants would not be crowded by the sashes before the weather would permit their removal, I planted in this bed several seeds from a first rate Long Island melon. Three of them I allowed to stand, and in June I took off the sashes, removed the upper box, with the addition of more earth gave a rounded surface to the top, and left the melons to run as they pleased. As the earliest melons that showed themselves, fell off, I had recourse to Armstrong's method of artificial impregnation, (by placing the unfertile blossoms on the fertile ones, and shaking them or turning them on each other in such a manner as to secure from the contact of the pollen their fecundation,) and soon had the satisfaction of seeing that their growth was as rapid as could be wished. These three plants spread over the whole mound, and yielded more than a dozen excellent melons, some of them of very large size. All the trouble was an occasional watering during some of the hottest, dryest days of the season.

There is one thing more to which in this place I wish to call the attention of my brother farmers, and that is the necessity of adopting a different course in the cultivation or growing of spring crops. There is, it is well known, a large portion of our country in which winter wheat is considered an uncertain crop, and in which the growing of the spring grains, such as spring wheat, barley and oats, extensively takes the place of autumn sown grain. So far as the actual profit is concerned, where the husbandry is good, there is not perhaps much to choose, but the culture of the spring grains in our common method acts most injuriously to our farms by filling them with noxious weeds, such as the Thistle, Johnswort, Charlock, Daisy, &c., which in a course of summer fallows and wheat rarely make much progress. It is a truth so obvious that no one can dispute it, that unless this spread and increase of weeds can be checked, the productiveness of our farms will be as much lessened, and the difficulties of cropping so much increased, as to materially lessen the value of our lands. The man who travels through almost any section of our country, will see thousands of acres of land, which under the course I have mentioned, is so completely stocked with the Canada thistle, as to be worthless for pasture, and unfit for cropping unless previously subjected to a thorough summer fallow. In a country where root or hoed crops take the place of summer fallows, they may be dispensed with, as in checking the growth of weeds hoed crops are very efficacious; but it is well known, that such crops are grown among us to only a limited extent, and hence the necessity of summer fallows as a check to weeds is the more imperious. Draining our lands thoroughly, and then subjecting them to deep plowing, would unquestionably do away much of the difficulty now experienced in the cultivation of winter wheat, as well as admit of such a rotation as would counteract the spread of these pests of the farm, to any considerable extent; but at present there seems no course remaining to our farmers who own retentive soils, (and such are those on which spring crops and weeds are the most common as well as injurious,) than summer or autumn fallowing for spring crops. The common practice of giving land intended for summer crops, but one, or at most two plowings in the spring, following as they must in quick succession, cannot kill a root of any weed, but on the contrary is precisely the course best adapted to spread them and make them grow vigorously. It is true two plowings in autumn after the spring sown crops come off, and at as wide an interval as the season will admit, would add to the cost of cropping; but it may well be questioned, whether by the better preparation of the ground, the partial destroying of weeds and the check surviving ones must receive, and the destruction of insects consequent on late plowing, the crops would not be so increased as to give as much or more profit than the present system affords. H. M. GAYLORD.

Otsco, October, 1840.

The Rohan Potato.

MESSRS. EDITORS—That there is a great deal too much praise bestowed on the introduction of a new plant, root or animal, is a fact not to be passed over in silence; and it is becoming so notorious that in the minds of the practical farmer—the farmer who makes his living by farming; and when he is in debt for part of his farm, pays for it, and all he honestly owes besides, from the proceeds of his farm—it creates a just and merited suspicion of the correctness of many statements in the agricultural papers. I have often heard the farmers comment upon it, and times without number heard them say "*it is done for speculation*," and in many instances their good practical sense decides correctly. But I have at present particular reference to the Rohan potato, of which we have had so many accounts of great and extraordinary yields; for a year or two past, hardly an agricultural paper came to hand but what had some great story in it—all true I suppose—and the disappointments that followed in consequence of it, were as numerous. And as the thing has taken very extensively, I think it my duty to contribute my mite to place their true character before the public. With this view, I will give you the result of one year's experiment, and disappointment too, if you please, and compare them with some other kind, namely, the Merino, a flesh colored long potato.

When I set out, I intended that the Rohan should excel all my other potatoes in product; and those in my neighborhood too. With this view, I prepared two acres of land of an excellent quality, which was moderately manured and planted with Ruta Baga and potatoes last year; and this year it was again manured at the rate of ten cart loads to the acre. On the 17th and 18th of May, this piece was planted two-thirds of an acre with the Rohan, and one and one-third with the Merino potato. The ground was in excellent order for planting. The Rohans received two weedings and one hilling; and the Merinos one weeding and one hilling. The ground on which the former grew, I considered the richest part in the field. In October, soon after the frost had killed the tops, the potatoes were gathered and put into cellars. The Merinos were gathered first, and the Rohans last. I was particular, and kept a correct account, and the result was as follows: Of the Rohans from two-thirds of an acre, I gathered 175 bushels, being at the rate of 263 to the acre; and of the Merinos from one and one-third of an acre I gathered 735 bushels, being at the rate of 550 to the acre. The test was fairly conducted; if there was any advantage, the Rohans had it, for they were on the best ground and received one more weeding.

Thus far I have spoken of the quantity, but I have also a word to say as to quality of this potato. I have tried some experiments in feeding them to my sheep, and find that they do not like them so well as the Merinos; the delicate taste of the sheep soon discovered which was most palatable; and I take it that they are good connoisseurs of potatoes, and that their decision may be relied upon in this matter. They eat the Rohans to be sure, and even with avidity, but as long as they can get the others, they leave these to the last. I agree with your correspondent, Mr. GUTHRIE, of Sackett's Harbor, that as a table potato they are abominable. They are, moreover, a potato which does not keep as well as other kinds; many of mine are now rotting, and some are entirely rotten already. I have opened two hundred or more for the purpose of examining them, and found many of them hollow, some filled with water, which emitted an offensive smell. These of course, must soon decay.

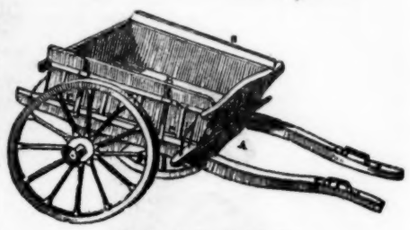
I would however, by no means discourage others from raising them. I shall continue to raise them on a moderate scale, and if any thing occurs to alter my opinion hereafter, will communicate it. It would be singular, if among the bad qualities, it had no good ones. I think I have discovered one already; it is this: if sheep are fed plentifully with them, they will require no water, for this potato is fortunately so constituted as to be "*victuals and drink*" both.

Yours, &c. H. D. GROVE.

Buskirk's Bridge, Dec. 1840.

I planted part of an ear of the famous tree corn in my garden. It fell much short of what it was recommended to be.

UTILITY OF HORSE CARTS.



(Scotch Cart.—Fig. 13.)

MESSRS. EDITORS—I do not recollect of noticing in any of the former numbers of the Cultivator, nor in any other agricultural journal, any thing regarding the utility or superiority of the horse cart over the wagon for many purposes of the farm. Having used them myself for the last seven years, enables me to form some opinion of their comparative usefulness on the farm. The following are my views on the subject, which you can publish if you deem them of sufficient importance to occupy a space in your columns.

I have been led to these remarks in consequence of noticing the ease and rapidity with which I got in my sugar beets last fall. I commenced pulling and topping my beets in the afternoon, when a sudden change in the weather indicated a storm before morning; I immediately started my two one horse carts, and in less than three hours we had 246 bushels securely in the cellar. It must be observed, however, that the cellar door is so situated that the loads could be "dumped" into the cellar at once.

"Although the wagon," says Low, "under certain given circumstances, possesses advantages of its own, it is yet inferior to the single horse cart, for the more common purposes of the farm."

The advantages the cart has over the wagon, are, that it can be turned in a much smaller space, and backed, and otherwise managed in much less time, and for moderate distances, a greater comparative weight may be moved by an equal exertion of animal force. In the cart, the horse partly bears the load and partly drags it. It is generally conceded, where carts have been used and attentively compared with wagons, that they have many advantages. A single horse, before a cart, will do half as much more work, as when he acts in conjunction with another. A horse harnessed singly has nothing but his load to contend with, whereas when harnessed with another, he is sometimes embarrassed, by the other moving quicker or slower than himself.

The great ease too, in which a cart may be loaded with any heavy substance, is another very important consideration, as well as the rapidity with which they can be unloaded. In removing earth or manure, and depositing it in heaps, the load can be displaced at once by raising the fore part of the body and sliding it out of the back part, when a load in a wagon would have to be thrown out with a shovel or fork, which consumes considerable time.

I have also found the cart very convenient and useful when planting potatoes—one horse answering the purpose of two, and, by keeping the cart in front of the men, the seed is convenient and at hand. So, too, when digging potatoes, it is easily filled. The box of a cart should contain from 16 to 18 bushels of potatoes, which a common sized horse will draw any where on dry ground, except up very steep hills.

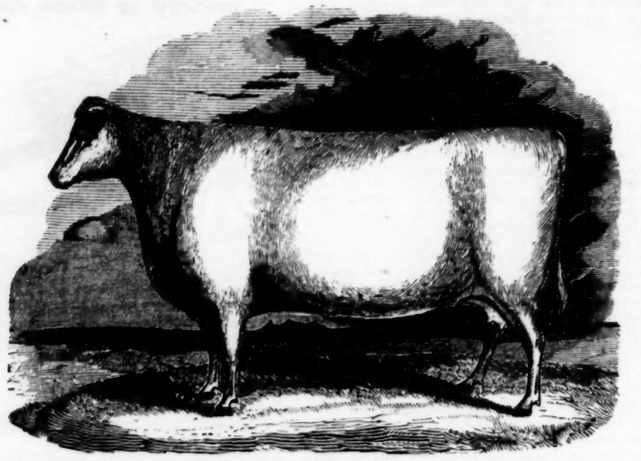
The objections to the use of horse carts I conceive to be as follows: First, the expense—a good cart with iron axletree, and a suitable harness, cannot be obtained for less than from $60 to $65. Second, in long distances, and on roads, they cannot be moved with the same degree of speed without galling or distressing the horse much more than the wagon; and third, each cart would require a driver. This, however, could be obviated, as in some sections of England, one man often manages two, three, and sometimes more, one horse carts, without any difficulty; for horses once in the habit of going singly, will follow each other as uniformly and steadily as they do when harnessed together.

"Carts drawn by one horse or by two horses," says a writer of unquestionable authority, "are the only farm carriages of some of the best cultivated counties; and no other are ever used in Scotland. Their loads depend upon the strength of their horses and nature of the roads; but in every case, it is asserted, that a given number of horses will draw a great deal more, and according to some, one third more, in single horse carts, than in wagons. Two horse carts are still the most common among farmers in Scotland; but those drawn by one horse, two of which are always driven by one man, are unquestionably preferable for most purposes. The carriers of the west of Scotland usually load from one to one and an half tons, on a single horse cart, and no where does it carry less than 12 cwt. if the roads are tolerable."

Carts, like other implements, vary in their forms and modes of construction, according to the nature of the business for which they are wanted; but for the purposes of farming, the Scotch cart, figured at the head of this article, appears to be of a good and substantial form, and one that would be durable.

C. N. BEMENT.

Three Hills Farm, 1841.



MR. PRENTICE'S SHORT HORN COW MATILDA.—[Fig. 14.]

MESSRS. GAYLORD & TUCKER—In the last No. of the Cultivator, I observe a criticism over the signature of "Herd Book," on the pedigree of "Daisy," in your November No.—also in the "American Farmer," published at Baltimore, on her form as there given. Both I acknowledge are very just, nor is there any thing in the matter or manner of either to complain of; on the contrary I confess I was glad to see them, as they were evidence to me that the caricatures in which our agricultural papers have so much abounded, and shall I say generally with impunity, were not further to be tolerated; for while I admit that in both particulars, this was vulnerable, I can but believe that very few I have seen, are less so, and besides in just so far as this does not come up to the life, it is against the animal, and consequently safe, while generally, I think it has been otherwise.

In relation to her form, will you allow me now to say, rather by way of explanation, than justification, that when I said the engraving was a good likeness, I was presuming upon the high reputation for general correctness of the artist, having only seen the drawing, which I still believe was true, and though any one would recognize the animal from the cut, yet you will recollect I complained at the time that it did her great injustice.

In regard to her pedigree, a mistake occurred in my transcribing it from memory; and this I should probably not have ventured to do, but that I had seen so many and such glaring errors pass unnoticed, I thought it of but little consequence; but in order now to correct it, I will give that of her dam "MATILDA," whose likeness accompanies this communication.

Matilda, then, is white, was calved in 1834, and bred by C. N. BEMENT, at Three Hills Farm, near this city. She was by "White Jacket," (bred by Anthony Dey, Esq., of New-York,) her dam Majesty, formerly "Heart," imported by the late Mr. Hollis, from his own yard in Blythe, England, on his removing to this country for settlement. She was a remarkably fine cow, for which he refused $700, on landing; and Mr. Bement says in a letter I have from him on the subject, "Majesty, the dam of your cow Matilda, was a large splendid animal, and had all the points and appearance of a thorough-bred improved Short Horn Durham; and although considerably advanced in years when I bought her, she still possessed great vigor of constitution. In color and general appearance, she very much resembled the Patroon's stock; and were I to venture an opinion, I should say she originated from that of Mr. Champion of Blythe, England, near whom the late Mr. Hollis lived before removing to this country."

That she was well bred, seems to be proved by the character of her stock, for without an exception, nothing finer has perhaps ever been seen in any country; among the six heifers she now has, I am persuaded there are those which would in England bring very great prices. I have been told by others, and good judges, a thousand dollars.

It was only after the death of Mr. Hollis, that "Majesty" was sold by the estate, and only in consequence of his death, is it, as I believe, that her perfect pedigree has not been found.

White Jacket was by "Young Regent," dam the imported cow "Hazel," bred by Samuel Scotson, of Toxteth Park, England, his g. s. imported Regent, whose dam was out of the thorough bred cow, Susan by Favorite—his g. g. s. was Regent by Favorite, a son of old Favorite, the sire of Comet, sold for 1000 guineas.

The dam of young Regent was Beauty, formerly "Flora," (also imported from England,) by "George," a son of Phenomenon, by Favorite, a son of old Favorite, out of Phillis by Petrarch. E. P. PRENTICE.

Mount Hope, near Albany, January 20, 1841.

Preservation of Root Crops.

MESSRS. GAYLORD & TUCKER—The perusal of each new number of your highly useful paper affords me so much, both of entertainment and instruction, that I always feel as if I should be making some other return for such gratifications, than the usual yearly payment of one dollar. But the fear of seeming to your readers to be "*zealous overmuch*," frequently restrains me from making communications for your Cultivator, when the spirit moves me to make them. I must beg you therefore, once for all, never to publish any thing I may send, unless you believe it will render sufficient service to some of our brethren, to make it worth reading. Of this, I wish *you* always to be the judges: and rest assured that your failure to publish will never "break any squares between us," since my chief motive for writing, next to the hope of doing some good to our cause, *is*, the desire I constantly feel to contribute my mite of communications towards sustaining a paper which has already rendered great services to American Husbandry, and bids fair to render still greater.

The subject of my present offering will be *the preservation of root crops;* in regard to which, although enough has been written, probably to fill a large volume, yet long experience has convinced me, that much of it is totally useless, or rather unnecessary, in all latitudes south of the Potomac River, and east of our mountains.

Some of the various modes recommended, would cost nearly as much as the value of the crop for one year; while the least expensive among them require a portion of time and labor in their construction, that might easily be saved. Cellars in dwelling houses are sometimes used; but every physician will tell us, (and they say what is perfectly true,) that the gas which constantly exhales,—even from sound roots, and still more from those which are decaying, as a portion always will be, in such places, is highly pernicious to health. Indeed, I once knew nearly a whole family to be destroyed by such a cause. But rooms are occasionally constructed for keeping roots in barns, wherein cattle and horses are kept; although good air is nearly as essential to brute beasts as to human beings. The only safe plan then, seems to be, to take care of your roots out of of doors. Here also a variety of plans have been proposed; in regard to most of which I can truly say, from my own experience, that, in our latitude, say about 38°, and of course in all lower degrees, they are,—to say the least of them,—unnecessarily troublesome.

A very slight covering of earth seems quite sufficient to protect any of our roots from being injured by frost in our latitude. Some of them indeed, are the better for not being taken up; for instance, the carrot and the parsnep. Those I have cultivated in my garden, for more than twenty years, and during the greater part of that time have suffered them to stand where they grew, without any cover whatever, because I found they were the sweeter for such exposure, and I have never during the whole period, found one of either kind injured by frost. Early in February, with us, it is best to take them up, in order to check the new growth which commences then, and destroys their sweetness. Even turneps, both ruta baga and other varieties, I have suffered to stand uncovered, by way of experiment, and have lost very few, comparatively speaking. But to protect them effectually, I have found it quite sufficient, after twisting off the tops in November for stock, to plow a furrow on each side the drill, with the mold-board next the turneps, so as to make the furrows meet in a ridge. In this situation they were dug as we wanted them, and were always found perfectly sound. It has generally been said, that when buried in trenches or large separate mounds, a kind of chimney should be left to ventilate them. This may be necessary in higher latitudes than ours, where it is deemed essential to draw over them a thick covering of earth; but this, even with us, where we bury in trenches or mounds, is never more than five or six inches thick, and often less. The trenches too, or the mounds, are not more than eight or ten inches deep; the first about two feet wide, and the second three feet in diameter. In these the roots are piled so as to form a ridge in the trenches, and a point in the round mounds. Both are sometimes covered with straw, and then the earth is raised over them, but no ventilation is left in either, as the roots keep well without any. In regard to Irish potatoes, a still thinner covering of earth than the one just mentioned, suffices with us to preserve them from rotting. Indeed it would seem as if they could freeze and thaw several times, during winter, without being destroyed, provided they are covered with earth all the time; for we often find them near the surface and perfectly sound, in the spring, when spading up the ground in which the crop had grown during the previous season. There they must have undergone freezing and thawing whenever the earth was in either state, as it often is to a much greater depth than the potato roots ever extend. Why those roots should always be destroyed when they freeze *above ground*, and not suffer equally when frozen *under ground*, is a matter of which I have never yet seen any explanation; it is among the numerous mysteries in vegetable physiology for the cause of which we have still to search.

Before I quit this subject of roots, permit me to offer a few comments on the letter of your correspondent, Mr. GUTHRIE, dated 24th of October, 1840.* This gentlemen, if I mistake not, is the same who informed you and your readers, in May last,† that he had fed away some fifty ton of French sugar beet, during the previous winter, to his hogs and cattle; not only without any apparent benefit, but to the manifest injury of both, unless in augmenting, for a time, the milk of his cows. But he endeavors to account for his failure by asserting that the French sugar beet contains "*no starch*," which he assumes to be the most nutritious of all the component parts of vegetables; although many writers of high reputation maintain that sugar is quite equal, if not superior, to starch in this respect. But be this as it may, your readers who have not tried the sugar beet must still decide that it is a very valuable root for stock, unless indeed, they can believe that Mr. Guthrie alone is *right*, and all your numerous correspondents *wrong*, who have communicated to you the highly favorable results of various experiments which they themselves have made with the sugar beet. Why, therefore, it failed with him, cannot have been caused by its deficiency in nutritive properties; but by something else which he has not noticed.

He concludes his letter of May last, with the following sentence: "Mr. Thorburn has my thanks for introducing this excellent article, (the Chinese tree-corn,) and when its merits and demerits are well understood, I believe he will have the thanks of thousands of others, as a public benefactor." Yet, this same gentleman tells you, in his October letter, that in "his catalogue of humbugs this year," (next to this corn,) "he places the Rohan potatoes at the top!"

Now, although I cannot rank myself among the thousands who will thank Mr. Thorburn as "a public benefactor," since the public, in my opinion, paid him most amply for his corn, in giving him at the rate of about forty dollars a bushel for it; yet I must think that it detracts much from the authority of Mr. Guthrie to find him now calling the same thing a humbug, on which he had bestowed such high praise only six months ago.

It is truly unfortunate for young farmers, and not a little perplexing to many old ones, that this vulgar term "*humbug*" should have been so indiscriminately applied within two or three years past, as nearly to have lost its original meaning; which is, "a deception, a cheat." For it is now affirmed of every new thing, if—upon one or two trials, it happens not to answer the most sanguine expectations of those who try it. That Mr. Guthrie is one of these indiscriminate appliers of the term seems very evident; unless indeed, we can believe that all the numerous individuals who have published accounts of the great produce both of the Chinese tree-corn, and of the Rohan pototoes, designed thereby to deceive and cheat the public. I have no doubt that such was the design of some who sold the corn at 50 and 100 cents per ear, and the potatoes at 18 or 20 dollars a bushel. But that the great majority of the planters and farmers who have communicated the highly favorable results of their experiments had no intention of the kind, seems equally certain, for they were not *sellers* but disinterested *recommenders* of these articles. I myself am one of this number, having twice succeeded equally well, both with the corn and the potatoes, which I have found highly productive. For this recommendation, however, I should deem no defense necessary—(having so many backers,) even if I were classed with the humbuggers for making it. But Mr. Guthrie has brought the fearful charge of *insanity* against all who venture to eat the Rohans; and moreover, has established himself as dietetic physician both for man and stock, in this particular. His words are, "*the quality of the potato is abominable: no man would eat them in his right senses; and they are undoubtedly as poor for stock as the table.*" Now, it has so happened,—shall I venture to confess it? that I dined twice last fall, with six or seven gentlemen and ladies, who determined, on each occasion, to compare the Rohans with two other common varieties of potatoes which are considered good among us, but not the best. Mark you, gentlemen, I verily believed, at the time, that we were all as much in our senses as we ever had been; and yet all pronounced the Rohans quite as good as the other two kinds; indeed, one of our company preferred them to both. Although I have no hope that this fact will convince Mr. Guthrie, that it is possible for men to eat Rohan potatoes and still be in their "right senses;" yet,

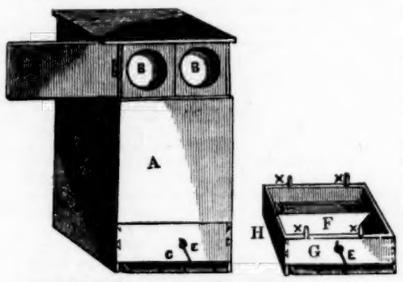
* Cult. vol. 7. p. 194. † Cult. vol. 7. p. 113.

I confidently trust, that it will suffice to satisfy you and most of your readers of its actually having been done in the two cases stated.

But to be serious, Mr. Guthrie writes sufficiently like a practical farmer to justify the belief, that he knows better than to suppose that the cause of American Husbandry can possibly be benefited, either by uttering extravagant opinions in regard to mere matters of taste, which can never be settled; or by positively asserting, on no better authority than such opinions, that the Rohan potatoes "*are undoubtedly as poor for stock as they are for the table.*" If he will take the trouble to analyze them carefully, and thus prove that they contain, either none at all, or very small proportions of the highly nutritive properties discovered in all the other varieties of this very valuable root heretofore analyzed, *then indeed*, we will listen to him and thank him for his information. But, until then, I believe most of his readers will think that his denunciations of the Rohan potatoes might as well have been reserved for table-talk among his friends.

I remain, gentlemen, your friend and constant reader. JAMES M. GARNETT.

Essex county, Va. Jan. 12, 1841.



The Self-Protecting Bee-Hive.—[Fig 15.]

MESSRS. GAYLORD & TUCKER—Enclosed, you will receive a drawing of the hive which I left at your office a few weeks since, and if agreeable to you, you will confer a favor on me, by giving it a place in your very valuable periodical.

The hive at your office, is of the exact form, and of the most suitable size and workmanship for use; and it contains all the principles of my patent. By the construction of this hive, three very important principles are brought into operation. 1st. The communication from drawer to drawer, thereby enabling the bees to pass freely from one drawer to the other, making as it were, but one drawer, when in fact there are two, thereby producing the most happy effects, and causing the bees uniformly to build in both drawers at the same time, when without the communication, they usually nearly fill one drawer, before they commence in the other. These drawers are removed by means of two right angled metalic slides. 2d. A perpendicular hive is obtained which should always be the case; without which the economy of the bees is much disturbed. It is well understood among apiarians, that bees always build their combs in perpendicular sheets, without regard to form or size of the apartment, consequently if the bottom of the hive is contracted, some of the filth must lodge in descending, thereby causing much derangement in their operations; but if the hive be perpendicular, all filth disengaged by the bees, immediately falls to the bottom, when it is at once discharged by means of the inclined plane. 3d. The base or protector. The base is the best possible discharger of worms and other filth. The planes may be constructed to any degree of inclination desired, without injury to the hive or bees; they furnish an opportunity for the bees to alight and enter both at front and rear sides of the hive, at the same time, enabling them to *crawl* to any part of the hive without again flying. Bees on returning to a hive, at a cool season of the year, partially benumbed, if obliged to fly after once alighting as from a suspended platform, frequently die for want of strength to rise; and that too at a season when their numbers are more wanted to produce animal heat sufficient for the wants of the brood. It is not unfrequently the case, that whole colonies when thus treated, perish in the month of April. The hive is ventilated by closing the planes more or less as circumstances seem to require.

I describe the construction of the Self-protecting Bee-hive, as follows. Observing that my improved hive consists of three parts, viz: 1st. A perpendicular hive thirteen inches square more or less, as seen in the accompanying drawings, fig. 15, A. 2d. The chamber with communicating drawers at the top of the hive for extracting the surplus honey, without destroying the bees, as seen in fig. 15, B. B. 3d. The base or protector. The base is a square frame of the size of the body of the hive, about four inches deep, without top or bottom, on which the hive rests, as seen in fig. 15, C., being connected and held in place by dowels, as seen at X. X. and hooks as seen in the figures. The front and rear sides of the base are narrower than the other sides by about an inch, leaving room at the bottom, for the play of the inclined planes, which form a bottom for the hive; consisting of two inclined planes slanting from the top of the base to the bottom. These inclined planes consist of boards hung within the box of the base, on pivots passing through the sides near the top edge of the center of the sides, and extending below the lower edge of the base in front and rear, with a play of about an inch, as seen at F. which represents the plane inclining to the front. G. the front of the base. H. The pivots on which the inclined planes hang. D. The projection of the inclined planes at the bottom of the base. E. The hook to close it tight against the bottom of the base when required.

The base or protector should be separated from the hive during the process of hiving, when the bees have entered the hive, it may again be added, and the planes hooked up, when it may be carried to any situation desired, without injuring the bees. The base may also be added to any hive of suitable size and form already containing bees.

Individual rights for constructing and using the above described hive may be obtained at five dollars each, by addressing the subscriber. WILLIAM M. HALL,

Wallingford, Ct., Dec. 9, 1840. Patentee.

The Farmers' Agricultural Society.

MESSRS. GAYLORD & TUCKER—In concurrence with a suggestion made by Mr. PETERS, in the last number of "The Cultivator," I forward to you the names of the officers chosen for the current year at a meeting of the "Farmers' Agricultural Society," held at Butternuts, Otsego county, January 6, 1841:

FRANCIS ROTCH, President, Butternuts.
Uri Jackson, jr. } Vice Presidents, Butternuts.
Wm. S. Bowne, }
Addison M. Snick, Secretary, Butternuts.
Thos. Hollis, Cor. Secretary, Gilbertsville.
Hezekiah Gregory, Treasurer.

Wilson B. Pearsall, David S. Bundy, Lewis G. Collins, John A. Davis, Wm. Musson, John Alexander,—Executive Committee.

The Society also received the statements of crops entered for premiums, which were examined and decided upon, and all premiums paid. The first premium for *carrots*, was awarded to Sutton Pearsall, for 10,680 lbs. of good, clean, sound roots, obtained from 44½ rods of land. Mr. Pearsall seemed to think they were not a much more expensive crop than the ruta baga, provided they were grown on a suitable soil. They are unquestionably more nutritious, but will not perhaps be so securely kept through the winter, without greater care than is required for ruta baga, nor is the richness of the carrot more than an equivalent for the greater weight of ruta baga that may be obtained from the same quantity of land. This root by chemical analysis is found to contain 98 parts of soluble matter in 1000; of which 95 will be sugar, and 3 starch.

The first premium for *turneps* was awarded to Wm. S. Bowne, for 515 bushels of ruta bagas, weighing 60 lbs. per bushel; grown on 67 rods of land. They were thoroughly topped, tailed, and cleared from dirt—30,900 lbs. Here is nearly a third more weight than of carrots on the quarter acre, but the soluble matter, which is the nutritious portion, is only 64 parts in 1000, of which 51 are sugar and 9 starch; so that for feeding purposes these two crops are about alike. But how is it with the land? The turnep crop has returned a much larger amount of vegetable in the tops than the carrot, nor is it quite so fastidious as to its soil, nor does it claim quite such nice culture, but then it is not so valuable as feed for dairy cows.

The first premium for *potatoes* was awarded to Francis Rotch, for 1616 baskets of 71 lbs. weight, making a total of 114,736 lbs., grown on two acres and seven-eighths of an acre of land; being at the rate of 604 bushels per acre, at 66 lbs. the bushel. Part of these were the Merino or South American potato, and part of them were the Rohan; it was, however, ascertained by measurement that the Rohan did not yield as well as the Merino, by 17 per cent. though planted upon the same soil, and receiving precisely the same culture, which was chiefly done by the plow, the hills being sufficiently wide apart to allow cross plowing between them; this was deep, and made the hills large and full. For a time the vines were so luxuriant as to create some doubt about the crop, but in consequence of ample space between the hills the tubers were matured and grew to a large size. The land was a light soil, broken up the year previous for corn, which was a light crop; the following spring it was manured with leached ashes, after which it was twice plowed and planted with potatoes. In point of labor this crop, I presume, is much less expensive than either turneps, carrots or beets, and is perhaps as easily saved as either of them. The potato affords about 230 parts of soluble matter in 1000, of which 175 may be starch, perhaps 17 sugar, and the rest gluten. This is a large yeld of nutriment; but the potato in its raw state is not I think so valuable for cattle as either of the other roots; for sheep, horses and pigs, it answers well without being cooked.

The second premium on potatoes was awarded to Hezekiah Gregory, for one half acre of Rohans, producing 183 bushels, of 66 lbs. to the bushel; making 12,178 lbs. This crop was very materially affected by the drouth; still I am rather inclined to question the superiority of the Rohan over the Merino as a general crop for feeding.

These premiums are the first offered by the society for the better culture of root crops, and the products show how imperfect we are in this department; and now allow me to pass to a subject somewhat connected with the foregoing, and offer you my experience on steaming roots.

Strongly impressed with the great advantage of cooking the potato, I resolved on erecting a steaming apparatus, and accordingly had a wooden boiler made with a sheet iron bottom, which was carefully set in brick work. A leaden pipe conducted the steam into a large cask (holding about 12 bushels) slung in the center on two pintles, so as to turn out its contents with great ease. I put about three pails of water into the box, and soon had my fire burning; a little Indian meal stopped any trifling leak that might be;—and I waited the moment of boiling. Never was truer saying, than, "the watched pot is slow to boil." There I stood, hour after hour, philosophizing upon the whys and wherefores—every thing was cold, the brick work hardly dry; the chimney too had never been heated; and then I decided the draft was too strong; this however was soon checked, and at length the water *did* boil, and the room to my satisfaction soon became a perfect vapor-bath. I made all safe, shut up the apartment, and left results for the full experiment of the next day. I could not however, get rid of certain misgivings which were strengthened by recalling to mind a casual remark of the late Judge Buel, "that *he* had returned to the old fashioned way of boiling potatoes, and on the whole was best satisfied with it." But then the more *modern improvements* of a wooden box and sheet-iron bottom; and then, to top all a little "go-cart," and a railway might materially alter the case, and it was all described in the Cultivator. Moreover, Mr. Bement, one of the committee on modern inventions, approved it; indeed he had one erected on this scientific principle, of exposing the least possible surface to the action of the fire, to procure in the smallest space of time and with the least expenditure of fuel, the greatest quantity of steam. "To-morrow" came—my wood was all split up fine and was dry—the boiler was nearly filled—the cover admirably secured and calked tight—the lead pipe of about 18 inches, attached (which entered the cask below the false-bottom,) the potatoes were put in, an old piece of carpeting laid over them, and then came the cover which fitted on to the cask. I now looked at my watch, lighted the fire, regulated the draft, took care that the flame struck this said sheet-iron bottom at the very mouth of the arch, and that it could only escape into the chimney by an opening just the size of a brick; put on more wood and attended to that part of the business with all the skill and diligence of a regular "furnace-man." My journal runs thus:—"Lighted the fire at 2 o'clock—turned the steam into the cask at half past 3—by half past 4 the cask felt warm, and the steam showed itself at the top—at half past 6 the potatoes were still hard on the top of the cask—shut up shop in despair and left the fire to burn out—at 9 o'clock report was made that some steam was still generated—and the *next morning* I found twelve bushels of potatoes admirably cooked! My man looked on in utter contempt of "book farming" and its science; for he has been in the habit of boiling on the very snow, with a good bed of logs, eight bushels of potatoes in about two and a half hours, and this too with a common cauldron in the open air! "*Thinks I to myself*" it may be more *scientific* to steam; but boiling is more practical—and it would seem that some others are adopting the same opinion; and now we are to have the *ne plus ultra* in "Mott's Agriculturist's Furnace." I do not quite understand the engraving; and hope Mr. Bement will favor us with another report, on further trial, and if there are any objections or difficulties, state them at once.

I am inclined to think there is too often a morbid sensibility on this subject, and that an undue consideration for the inventor may withhold from the public a knowledge of defects, not at first discovered, but which a further trial of the article may have subsequently betrayed.—Query? Would it not be an advantage to have the rim of the cauldron so cast as to admit a close cover or a steamer to set close over it? and why not have points of attachment cast on the boiler so that it may, with a small crane or lever, be raised from the stove, and its contents "up-set" into a "receiver." I hope to hear more of this said furnace, for such a convenience is very much wanted by farmers. I once saw a boiler with a large discharge pipe cast on to and with the bottom; why would not that save time and trouble, and allow of the potatoes being dried off after boiling, by drawing away the water. Yours, &c. R.

Butternuts, Jan. 17, 1841.

The Mulberry—Inquiry.

MESSRS. EDITORS—I have a few Italian Mulberry trees that are on the point of being destroyed by a worm seven-eighths of an inch in length, white, with a red head; wherever a tree is bark-broken, it commences and works along under the bark, and unless it is dug out and killed, it soon destroys the tree. I have tried lime to no effect. If any of your correspondents know a remedy, I should be obliged could I learn it through your invaluable paper. C. M. L. ANDREWS.

Macedon Center, January 2, 1841.

Feeding Silk Worms—Inquiry.

MESSRS. EDITORS—I wish to inquire through the Cultivator, whether silk worms, partly reared on the white mulberry, may be fed with safety on the large leaf Canton, or multicaulis, and also whether they may be fed with these kinds together or alternately with an advantage; and if not, what is the best method to be pursued, where these different kinds are to be used? Some information, drawn from actual and fair experiment, would be useful at the present time. Yours.

Ashfield, Mass. Jan. 11, 1841. B. G.

Short Horns vs. Herefords.

MESSRS. GAYLORD & TUCKER—I have read with care the recent observations of Mr. SOTHAM, in the two last numbers of the Cultivator, and really I must say I have read nothing in them that is calculated to remove the impression that I received from his first communication, "that the Herefords he has imported, have been bred, with a strong cross from the Durham." In his last communication he appears to have selected my observations in the October number of the Cultivator, particularly, to which to address his reply. I can truly say I was rather sorry to see that, as the communication of Mr. RANDALL, had he selected it, to frame his reply to, would have opened to him a larger field, and given him much more matter to work upon, than did that from me. No doubt Mr. S. acted in that matter according to the first law of nature—he selected his weakest adversary, confident of an easy victory. I am pleased, however, to see that Mr. R. has again resumed his pen, and truly he has wielded it to some purpose in the last Cultivator; he has there made a reply to Mr. S. that will answer for himself, me, and all others who have given views, to which Mr. S. has taken exception; and I should be disposed to let the matter, so far as I am concerned, rest where he has placed it, were it not for some observations particularly made to me by Mr. S. I have acted upon his suggestion, and reperused the remarks I quoted from "Youatt," and I see nothing more in the quotation than I did before. Mr. S. asks with confidence, "If a good ox can be bred from an inferior dam?" In reply to him, I would say, that according to his own showing, "many a good ox has been bred from an inferior dam." I take it from the little experience I have had, that it is much easier to raise a good ox, than to raise either a good bull or a good cow. This remark may appear strange to many persons, but will be easily accounted for and understood by every breeder. It would be considered now, a work of supererogation for me to prove "Youatt's History of British Cattle," a standard work—every breeder considers it such—and so I have no doubt, does Mr. S., except so far as their views with regard to the Herefords antagonize. English breeders are celebrated for their skill, and a great portion of that skill has been exhibited in the success which has attended the different crosses they have made with the different breeds of cattle. It is matter of history that a most important improvement has been effected upon the Devonshires by what has been termed a 'stolen cross with the Herefords." The animals bred from this cross were called Devonshires, and so have continued to be called.

Another and still more important cross was successfully effected between the Durhams and the Galloways. The result, no doubt, of these crosses was much owing to the skill with which the animals with which they were effected, were selected by the spirited breeders who had the courage to venture upon them. Such an experiment made under the direction of a man of no practical experience or skill in his business, nine times in ten, would be a complete failure. The friend of Mr. Sotham in England, from whom he procured his stock, I have no doubt possesses much skill and experience in his business as a cattle breeder, and really I see no harm in the fact of his improving his Herefords, by a "stolen cross" with the Durhams; the harm lies in his selling and passing them for pure Herefords, and not giving the proper credit for the improvement to the Durham, by whose agency it was effected.

I would ask the cattle breeder to examine the portrait of the Earl of Egremont's cow, given by Youatt in his history, called too a beautiful specimen of the Hereford; then examine the portrait of Mr. Sotham's cow "Matchless," given in the November number of the Cultivator, and then say in all candor if there is one single solitary point of identity in "Matchless" with the Hereford cow of Earl Egremont, except the color!! and yet all this astonishing change has been effected in seven or eight years!!

One argument used by Youatt, to prove that the Herefords are an aboriginal breed, is the largeness of the head and the thickness of the neck, when compared with the Devon cattle, and he says, "were it not for the white face, and the somewhat larger head and thicker neck, it would not at all times be easy to distinguish between a light Hereford and a heavy Devon." Now where is even the most remote degree of similarity between "Matchless," and the portrait of the Devon cow? True, they are both the portraits of cows, but so were Allen's portraits of "Seneca Chief" and "Alligator" both hogs, but the similarity was done with when you had called the name common to the genus. It may be asked by some if Mr. Sotham's Herefords *are really Durhams*, how do you account for the color? That, I answer, in the hands of a skilful breeder is easy—the color of the Devon is very tenacious when crossed with any other breed; so say men of experience in the matter; so doubtless is the color of the Herefords; and a small degree of attention to the selection of animals retaining the color to breed from, would easily retain that point, when every other one was gone. Mr. S. has mistaken my remarks when he says I talked of "showing spirit in selecting a breed of our own," "and would be pleased to hear my suggestions in commencing the breed." My observation was, and I am pleased to have an opportunity to repeat it—"See what the Herefords were—hear what they are now—then say if there is impropriety in charging their admitted recent improvement, in points in which the Short Horns excel, to an admixture with them. If such is the fact, and we have a number of the finest specimens of the Short Horns to begin with; cannot we, by judicious crossings, and proper attention, form *for ourselves*, if I may be allowed the expression, a breed of grade cattle, without expending enormous sums of money, to pay our trans-atlantic neighbors for doing work that *we ought now to do for ourselves?*" Mr. S. thinks it would take a century to do any thing of importance in such a matter. I beg leave to differ with him, and in answer to his argument of time, would only say to him, see what Mr. Hewer has done in eight or ten years. I can give him an example nearer home; see what Col. Jacques has done!! The truth is we have breeders of as much skill and as much spirit as England can boast of. Col. Jacques has done as much for a milking breed of cattle as ever Bakewell or Collins has done for a beef breed. True he had the benefit of their experience as far as it went in his road, but this we can all have if we take and read the Cultivator, and it perseveres in the course it is now taking. Let me press it still further upon the community, foster your own country and let every effort be made to advance her general interests, in agriculture and stock raising. Keep the pure blood pure, and purify the scrub stock by admixture with it; keep nothing but a full blood bull, and let all your cows to him, and in a few years, by proper management, our stock will compare with England's best. J. H. HEPBURN.

Jersey Shore, Lycoming Co., (Pa.) Dec. 16, 1840.

REPLY TO "N. N. D."

I LOVE the application of science to the practical purposes of life, and am free to admit that it is one of the greatest improvements of this utilitarian age; but I am strongly inclined to believe, that the practice of upbraiding and decrying those who follow the dictates of their own understanding, and value the wisdom and experience of past ages, is not calculated to advance the interests of true philosophy or improve the agriculture of the day. It is too much like a controversy between common sense and learning, which invariably ends in a victory of the former over its best friend, a friend with whom it will always harmonize when both are understood; and is one cause why learning makes little progress among those who put a high estimate upon the value of their senses. For my own part, I frankly acknowledge that I would not give up a single faculty of my understanding, nor the power of drawing a single deduction fairly from its exercise, for all the knowledge of Aristotle, or all the discoveries of Sir Humphrey Davy. "My Lords," says the Earl of Chatham, in one of his eloquent defences of American resistance, "I am often led to distrust the refinements of learning, when I so frequently see learned men suffer their minds to be misled by it; how lamentable indeed would be the condition of mankind, if science and learning, which fall to the lot of so few men, were necessary for our successful progress. Providence has taken better care of our happiness, and has given us in the simplicity of common sense, a rule for our conduct that will never deceive us."

I have been led to make these remarks from reading in the Cultivator, (page 197, vol. 7,) the *opinion*, (for there is no evidence that the conclusions are drawn from experiment,) of your scientific correspondent, N. N. D. of Stockport, that "some lands which contain a large per centage of the oxide of iron, are remarkable for their fertility; these are *injured*, and in fact *ruined*, by the application of manure." And he goes on with considerable display of chemical learning to fortify his fact with reasons. I should not call public attention to this opinion if it did not appear to be authenticated by a scientific and popular writer, whose object is laudable; but I lay down the broad position, that *no land* intended in the economy of nature for the purposes of residence and cultivation, was ever injured by the application of manure. Plants require only a determinate quantity of manure; an excess is detrimental. And so a man requires only a certain quantity of food; an excess is injurious; but, that land was ever seriously *injured* and in fact *ruined*, by the application of manure, is a new theory in agricultural science; it is one of those hypothetical opinions drawn from the refinements of learning, that serve to bring it into disrepute. Hypothesis non fingo, says Newton, in his Principia; and "je ne vois jamais science s'avancé par hypothesis," says Cuvier in his *Ossemens Fossils*; but the opinion of your correspondent, who can't give up manure in all cases, is said to be the result of practical experience, and is probably like another opinion sometimes advanced in the Cultivator, "that draining is a great improvement, but we cannot entirely give up irrigation." The truth I take to be, that *all lands* from which crops are taken, require the application of manure, and the omission to apply it must end in sterility; but lest we should be supposed capable of misrepresenting your correspondent, let us have his own language: "Some farmers have actually denied the efficacy of animal manures and have asserted that their *frequent use* would make the land barren; in *their experience this was literally true*: and chemistry explains why it is so; experience shows us that *all the soluble salts* of iron are pernicious to vegetation; all the *insoluble oxides* of iron are harmless. Some soils which contain a large per centage of the oxide of iron are remarkable for their fertility; *these* are *injured* and in fact *ruined* by the application of manure. Animal manures all contain more or less of sulphur; according to the irreversible laws of combination, sulphureted hydrogen is one of the products of their decomposition; this unites with the oxide of iron in the soil, and by a play of double affinities, *water* and *sulphuret* are formed from their union; this sulphuret of iron by continued exposure to the atmosphere absorbs oxygen from it, and hence results another chemical transformation, and *sulphate of iron* is produced; this is another very *soluble* salt, most pernicious to vegetation, and absolute sterility must result." It is perhaps not intended by N. N. D. to take any distinction between *animal* and other manures as they are used indiscriminately in the above extract, and it is probable that sulphur exists in them all, and besides it is the *sulphate of iron* that does the mischief. But while the iron is *only* hurtful in its *acid* combinations, Dr. Jackson is quoted to show, that "one of the methods of improvement employed extensively in Belgium, is to spread iron, copper, sulphur, &c. upon the surface for the purpose of generating *sulphate of iron*, a substance that liberates carbonic acid gas, and forms gypsum from calcarious soils."

If I understand this reasoning, (which my readers must excuse me if I admit I do not) it is this: that *sulphate* of iron which is *always* pernicious to vegetation, when applied to calcarious soils—is fertilizing! and although the *oxides* of iron are harmless, they ruin *manured* land! and why? Because the manure generates sulphureted hydrogen, which, uniting with the oxide forms *water* and *sulphuret* of iron; the sulphuret absorbs oxygen from the air and produces the sulphate.

What quantity of calcarious matter is necessary to change the influence of the sulphate and form gypsum from the soil, is not explained to us; but I suppose any soil that will effervesce with acids, is entitled to the epithet calcarious. If we can from such a combination obtain gypsum, we should be happy to see the proofs.

Now admitting the fact *which is not proved*, that there is a small quantity of sulphureted hydrogen gas evolved by the decomposition of manure, it would seem from Du Hamel's experiments, that it was highly useful in vegetation, and most assuredly it would require a *double* play of affinities to produce *water* and sulphuret of iron, from a union of the *oxide of iron*—in the soil—with sulphureted hydrogen gas; certainly there must be some double dealing in it, for it cannot be done as far as our experience goes, by any honest simple process. The affinity of iron for hydrogen gas is well known, but in this instance there are still stronger affinities to overcome. The gas immediately on its development would become dissipated in the atmosphere; if there was any water in contact with it, it would immediately absorb the whole of the gas, and instead of uniting with the oxide and forming the substances usually distinguished among mineralogists by the names of magnetic pyrites and cubic pyrites, which I suppose to be the sulphurets of iron; it would, according to all the rational deductions that can be drawn from its nature, perform the other functions of aerial phenomena upon the surrounding vegetables. If, however, it should not escape, but unite with the oxide and form water, how long has this been considered detrimental to the growth of plants? We know, if it comes in a deluge like Noah's flood, it would destroy "every living thing," but even then it would not "produce sterility;" but perhaps it is not the same water as that usually produced by the union of hydrogen and oxygen gases; it may be a kind of mineral water.

I am not a man of science, but a plain country farmer, and therefore, not disposed to dispute with your learned correspondent upon scientific subjects, but when he tells me that *manure* is pernicious to land; that the water formed by *any* chemical combinations *in the soil* is injurious to vegetation; that oxide of iron mixed with manure by various transformations, becomes pyrites or *green vitriol* or *copperas*, I feel as if I wanted to ask him for the proofs. Let us have the proofs; we don't dispute the facts, but let us see the experiment.

The writer of this article has been for many years familiar with land containing large quantities of the oxide of iron, upon which manure has been applied without stint or measure for ages, with, unhappily for this new theory, a continued increase of fertility. HOLKHAM.

Friendsville, Pa. 12 *mo.* 25, 1840.

Raising Potatoes from the Seed.

MESSRS. GAYLORD & TUCKER—During the past season I have reared potatoes from the seed; as the product far exceeded my anticipations, I will state the course of culture I pursued, and the result. As it has been generally supposed, that it required about 3 years to perfect the growth of the potato from seed, many have been deterred from making the attempt. Last fall I plucked from the stalk of a Mercer potato, a single cluster of four seed balls; these were preserved during winter from frost. On the 11th April, the seeds were sown in a hot bed; on the 18th June, the plants being from four to five inches in height, were taken up; twenty-five of the strongest plants were transplanted to the garden in rows fifteen inches apart, and six inches distant in the rows; they were once earthed or hoed slightly. Some of the tops were small, but generally as large as ordinary field potatoes; consequently they became somewhat smothered under their own foliage, and would doubtless have done much better had they been planted the same distance apart usually given in common field culture. The whole were gathered on the 17th Oct.; the tubers weighed 18¼ lbs.; one potato weighed 8¼ ounces, several 6 ounces, and half of them large enough for the table; they were generally kidney shaped, various in color, and in their general appearance a marked difference, the product of one plant only partaking of the parent. WM. W. VAN LOAN.

Catskill, Oct. 28, 1840.

HOT AIR FURNACE.

EDITORS OF THE CULTIVATOR—I observe with pleasure, a communication in your Dec. number, (vol. 7, page 195,) from LEVI L. LOWELL, describing a hot air furnace erected by him some years since. Every experiment of the kind is calculated to lead to the improvement of this new and excellent mode of warming rooms.

Since these furnaces have become a little known, a very erroneous impression has prevailed with some, in relation to the amount of fuel consumed by them. This has doubtless arisen from the enormous quantity of heat wasted by those usually built in cities. A gentleman from the town, endeavored to dissaude his friend in the country from erecting one, asserting that "it would soon burn up all the wood on his farm." Now, nothing can be farther from the fact; indeed it is one of the most striking excellencies of this furnace, and that which peculiarly recommends it to the farmers of our country, that it consumes so little. From actual experiment, *it is certain*, that our large two-story farm houses, may be warmed throughout, day and night, with *ten cords* of wood a year.

Error exists also relative to their healthiness. Years of trial, however, have removed all doubt on this point. It has been proved that better health, especially freedom from catarrhs and their attendant symptoms, is enjoyed, not only by those who keep within doors, but by those whose business causes them to be exposed to the weather through the day. For invalids, the furnace is invaluable. The writer has recently had an opportunity of testing this with great satisfaction in his own family. And it is believed that West India voyages, for consumptive patients, would be more rarely required than at present, if it was in more general use. The peculiar feeling of summer air, and the entire freedom from the unpleasant sensation of stove heat, is such, that few who have once tried the furnace, will relinquish it willingly. In all weathers it is the same. While I am now writing, enjoying the advantages of a summer atmosphere, while "winter, in his roughest mood," is raging without.

The chief advantages of the furnace I described in a former number, appear to be in the broad, square, flat drums, which, by breaking short the smoke in its course, and exposing its heat to the air without by large surfaces, suffers little to escape. A sufficient number of these, and *large hot air tubes*, will commonly insure a good furnace. The latter should be so large, that air of a temperature of 140° Fahrenheit, rising through them, will keep the rooms at 70° in the most intensely cold weather. For this, the diameter cannot be much less than one foot.

This furnace originated with and was first erected in the year 1834, by WILLIAM R. SMITH, of Macedon. Perhaps some of your readers may be glad to learn, that complete castings for the stove, drums, and the circular revolving grates for the hot air pipes, of large size and improved construction, are furnished to order by Elbridge Williams of Palmyra, Wayne County, New York. Very respectfully, J. J. THOMAS.

Macedon, Wayne Co., 12 mo. 1840.

The Chinese Tree Corn.

HAVING several communications on the culture of the Chinese Tree Corn, we have thought best to condense them as much as possible, and arrange them all under one head.

Mr. HENRY VAN KLEECK of Cuddebackville, Orange county, N. Y., says: "I send you two ears of what I have cultivated for China tree corn, wishing to know if this is like that which has generally been sold under that name. From the plat of ground mentioned in my communication, (p. 196, vol. 7,) being a scant acre, I had 120 bushels of ears; and from two separate bushels of ears, shelled at different times, I had each time more than 20 quarts when shelled. This you will perceive would be at the rate of 75 bushels of shelled corn from the acre. In the whole, there was not one bushel that was not perfectly sound and fit for seed. When it is considered that much of this was injured by the presence of a number of old apple trees—that three-fourths of it had had no manure for many years, except one plastering in the year 1836, and that a part of that on which the manure was put was very sandy, and consequently much injured by the drouth, I think we ought to be pretty well satisfied of its extraordinary productiveness, and the more so as it yielded twice as much per acre, as four or five acres of another kind in the same field where the land was equally good—although part of its extra yield may be ascribed to better cultivation, the other being cultivated on shares." ☞The ears of corn sent us with the above, are the same as the Chinese tree corn sold by Mr. THORBURN, of this city.

Mr. J. W. POINIER, of Morristown, N. J., says: "I planted six acres of the tree corn, and obtained nearly 500 bushels of corn in the ear, or about 90 bushels to the acre. It was planted on sod ground, plowed in the spring, and manured with poudrette, about one gill to the hill. I dropped the corn on the top of the manure. In the same field, I raised from 2½ acres of White Flint, 250 bushels, and a very superior corn to the Chinese. I made a large experiment with the tree corn for the express purpose of testing it with my other corn, and I have come to the conclusion that no more of it will grow on my farm."

"T. A." of Flushing, L. I. says: "I will briefly state the yield of my crop of this year. From a piece of ground containing about 2¼ acres, we gathered 280 bushels of ears, which is at the rate of 112 bushels to the acre; it is generally allowed that two bushels of ears will yield one bushel of shelled corn; the Chinese will yield two quarts over the bushel. It is a 12 rowed indented corn, weighing 56 pounds per bushel. There is generally two ears on a stalk, sometimes three, and there has been four found on a stalk, although the last mentioned number is more rare. We have raised the above corn for several years, and I think it is more profitable than any other. I have no doubt there has been other varieties of corn sold for the Chinese, which having failed in answering the expectations of those that have cultivated them, it has led many intelligent farmers to believe that the Chinese corn is all a humbug, which is indeed far from it."

Board and Stone Fence.

(*Section of Board Fence.—Fig.* 16.)

IF a poor farmer happens to have a good fence it is good luck, but it is considered an indispensable item for a good farmer to have a good fence. In my travels I have frequently noticed in the construction of board fences a failure both for cheapness and durability. The common practice of putting a post at the center of the boards and of making the fence too high, and of using common rails and wide boards for fences are material objections. Where three posts are set to one board and one or more are raised by frost or gets out of place, it must give way either by splitting the boards or breaking the nails; on repairing it, the board must be taken from the posts, and a loss sustained, in breaking of boards and nails. High fences and wide boards will sooner get out of order by the action of every wind.

The above cut (Fig. 16,) will better illustrate the plan that I would recommend for the construction of a common field fence. Such an one may be racked about or forced up by frost, then replaced with despatch, and drove home with a beetle or other weight without injuring the fence or nails materially.

I have my logs cut from ten to eleven feet long, boards from seven to eight inches wide, an inch and one-fourth thick; battens A B C to each post of the same material, four feet long; oak pins suitable for inch and one-quarter bore, or that which is cheaper, cut spikes, weighing about four to the pound; three spikes or pins may be drove through the battens and boards as at A B, or under the board as at C, each end of the board should extend by the post. A fence of this description made of four boards, eight inches in width, six inches asunder; from the ground to the first board, four inches space, will raise a fence four feet four inches high.

I use the same kind of boards, posts and fastenings, for a half wall, laid three feet high; the first board should be placed close to the wall, the space between this and the upper one should be eight or nine inches, that sheep may the sooner attempt, but in vain, to creep through, instead of elevating his mind any higher, which he will do, if the boards are near together.

For those who may have a stout fence thrown up by frost, I will suggest an idea of replacing it; first block up the fence, then dig down by the side and under the posts the depth required; then with a few hands it may be carefully let down to its former position.

To prevent frost from raising a post of any kind, first sink the hole from two and a half to three and a half feet deep, sufficiently large to admit cobble stone around the post, which must be drove with an iron bar until the space is filled, and use no dirt except about four inches to cover the surface.

A farmer near me says that posts should be set with the top down. If thus more durable, I can account for it only by supposing that the moisture at the bottom is not conveyed upward so readily through the pores of the wood. I have set four white oak gate posts four feet deep, two of them with the top down, and marked them for an experimental trial; it possibly may be of some use to the rising generation, if not directly for my benefit.

Churning Milk in Mexico.

MANY patents have been granted for various kinds of churns in our yankee land, which probably in most cases originated from those who were accustomed to the "good old way," but it strikes me that the Mexican churn beats all your yankee inventions for ease, pleasure, and saving of time. The method as communicated to me by Joseph Greenham, a merchant of Vera Cruz, is: to enclose two tin cans in a green cow hide, the size of them to correspond to the quantity of milk; the hide will shrink on drying and adhere tight to the cans, and being placed one on each side of a trotting horse, it has the appearance of saddle-bags; when filled nearly full with milk, the Mexican has only to mount the steed and ride into town from Mediling to Vera Cruz, the distance eight miles; the motion of the horse effects the separation of the butter from the milk; and the rider has only to pocket the cash for his buttermilk and butter and at his leisure wend his way home.

Yours, S. W. JEWETT.

Weybridge, Vt. Jan. 1841.

On the Culture of Wheat.

MESSRS. GAYLORD & TUCKER—I have for some time past, observed several complaints in the papers, of the injury done to the wheat crops by the "*Hessian fly*," and from what I have seen, I am induced to think that it is the *farmer's fault if that "fly" does his wheat an injury*. As you now have my opinion, I will show you how I came to that conclusion.

When I began to manage the farm whereon I now live, twenty-one years ago, I had read and heard a great deal of the ravages of the fly, and of the different "soaks" for the seed to prevent the injury. Some would find a certain preventive in lime water; others in a solution of nitre; others in strong brine, &c. &c. *and all said to be from actual experiment*, and all based on the idea that the egg or nit from which the fly came, was carried into the ground, in the fuzzy end of the grain. For the purpose of trying the different soaks, I prepared some seed wheat in each kind of soak that I had heard or read of; a part of all the seed I had so prepared, I sowed in a lot near the house, (about the middle of September,) keeping each kind of soak by itself; the remainder of the seed I sowed on cotton, which I had floating on water in glass vessels in my house. That on the cotton came up about the same time as that which was sown in the ground. I let it all stand until about the 25th of Oct. when I took up nearly an equal quantity of the plants, from the different kinds of soaks that was sown in the lot, and of those that were sown on the cotton. I then split the plants from the root to the top, and placed them successively under a strong microscope, and to my surprise, nearly every plant that came from *the lot* was perforated near the top of the ground, and had from three to eight eggs or nits in each, while those taken from the cotton had no perforation nor nits about them. This satisfied me that the cause of the fly *was not* carried into the ground by the seed. I then tried some of the wheat under the glass, but could not find any thing like an egg or nit about it, and I came to the conclusion that if I kept my wheat out of the ground till after a few good white frosts, (which would likely destroy what flies there was,) I should not be troubled by them, and from that time to this I have never sown my wheat *until in October*, and I have never found my grain hurt by the fly, although I have not omitted sowing wheat for eighteen years. From this I conclude, that the farmer who sows his wheat before some good frosts, and thereby makes his wheat fields look very fine in the fall, offers the fly a fine shelter for their eggs, and invites them to destroy his grain.

Respectfully yours, L.

Hamburgh, N. J. Jan. 1841.

Culture of the Sugar Beet.

MESSRS. GAYLORD & TUCKER—I have tried during the four years past, various modes of cultivating the Sugar Beet. On our soils, which we call red land, but which I suppose you would call alluvial, the following plan I find the best. I work my ground until it is well pulverized, with a good supply of manure if it is poor. I then draw furrows about two feet apart, into which I put a reasonable quantity of manure. I then run my plow around both sides of the furrow, which will cover the manure and raise it on a ridge. I plant the seed from ten to twelve inches apart on the ridge. In this way I have been tolerably successful. Last year I had an extraordinary crop, but I did not take time to ascertain the number of bushels or tons to the acre This year I had two acres, and got twenty-six tons, though I do not call it more than half a crop, it having been a very dry season. PETER DIEHL.

New Oxford, Pa. Dec. 21, 1840.

LARGE PIGS.

MESSRS. EDITORS—Mr. Jabe Pierce of this place, a few days since killed a pig 9 months and 10 days old, which weighed 272½ lbs. It was one quarter blood Berkshire. Its grand-father on its mother's side, must have been, I think, the original from which Mr. Allen drew his picture of the Land-pike; he weighed when killed, between 3 and 400 lbs., with very ordinary feed. The only way his owner could keep him confined, was by tying his hind legs and putting him in a pen 8 or 9 feet high. What do you think of crossing the Berkshire with the native—will it not produce a larger, and for ordinary farmers, a better breed? The experiment of Mr. Pierce would lead one to form this theory.

I observe conflicting communications in regard to the value of sugar beets as a food for hogs. We used about 100 bushels last year, and were so well pleased, that we raised some 4 or 500 bushels this year, which we are now feeding to our hogs, 13 in number; we commenced feeding the first of December, and thus far have found no reason to condemn the beet; our hogs not only live, but gain finely. In the spring we will communicate the result of our experiment. M. Y. T.

New Lebanon, N. Y. Jan. 4, 1841.

MESSRS. EDITORS—I killed a pig the 8th inst. which was ten months and eight days old; he weighed 266 lbs. neat. He was half Bedford, one-fourth Chester, and one-fourth what is called no-bone. I did not commence feeding him until he was four months old. It is the opinion of my neighbors, if he had been half Berkshire and half Bedford, he would have weighed upwards of 300 lbs. I fed mostly on slops. W. L. SMITH.

Smithville P. O. Powhattan Co. Va., Dec. 23, 1840.

Qualities of the Sugar Beet.

EDITORS OF THE CULTIVATOR—Your friend Mr. CATON, who hails from Illinois, is most ably and very opportunely answered in his inquiries concerning the nutritive qualities of the beet root, by your able correspondent of the Three Hills Farm; but the great importance of the subject at this time, induces me to trouble you with a few other remarks. Much money has already been expended, and very uselessly as I believe, in this country in raising beets, both for feed and for sugar, and much more in all probability will be expended as uselessly. It is, therefore, highly important that the merits and demerits of the beet root should be fairly laid before the agricultural public as early as may be.

In the spring of 1839, I purchased a large amount of seed, believed to have been recently imported from France; much of this I planted, the residue was disposed of to others, who had acquired as exalted ideas of the value of sugar beet as I had. My own experience I have already detailed; recently I have seen most of those who embarked with me in the enterprise, not one of which could be induced to repeat the trial in 1840. I asked one what was the effects of long continued feed of the beet to cattle? His answer was, "the cattle, the latter part of winter become so weak and feeble that they can scarcely rise upon their feet, or stand when they are up." Another,—one of the best judges in the state on such a subject, says "he fed out a considerable crop of beets to his cattle and hogs, and that they did most miserably on them, and that he would never repeat the experiment." I said to another gentleman, Sir, I understand you have fed your crop of beets to your hogs; will you inform me of your success? He replied, "that his hogs loved the beets *dreadfully*, and after filling themselves as full as they could hold they would squeal for more, and what was the worst of it, they gained nothing during the whole time," and added his opinion, "that the French sugar beet was the meanest article ever fed to a hog." One gentleman, who raised many hundred bushels for distilling, told me that there was so much woody fibre in the beet that he could do nothing with them—that he could as well distill a bundle of hay.

I have said that cows, well fed otherways, would give a large supply of good milk, when fed on beets. My cows were well fed on dry fodder, with a limited supply of water, and in that case it might reasonably be expected that full feed of beets would promote a large secretion of milk; but now I am satisfied that I gave them more credit than they deserved, for I make as much butter this winter from the same cows, on dry fodder alone, as I did last with the addition of beets.

But here is one consideration to which I wish to call the attention of those who may be disposed to enter upon the cultivation of the beet. Without starting the question, whether sugar is or is not nutritive, as an article of diet, it is perfectly obvious that it is sugar, in some form or other which we are in pursuit of when we raise a crop of beets. Now, if it shall prove, as I think it will, that in adopting the French analysis of sugar beet, we have committed a most egregious blunder in applying it to the beet raised in this country, and that instead of our beets containing 10 per cent or even 6, that they contain, especially in a heavy growth, scarcely 2 per cent, and I know that I could have showed tons that would not have given 1 per cent of pure sugar—then the root must of necessity be worthless. It may prove, and probably will, that beets raised in France are as much richer than ours, as are their grapes. In order to raise sweet beets a profuse supply of vegeto-animal manure is, I think, indispensable, and I have doubted if the western prairies would not give beets more destitute of sugar than ours. I have taken some pains to ascertain if such be the fact. One friend in St. Clair county, Ill. writes me that "his beets grew to a great size, but that they are destitute of sweetness." Yesterday I completed a series of experiments, instituted with the view of ascertaining the precise quantity of sugar contained in a small crop of beets raised the last season in my garden. I have tried nearly every process that has been published; but I gave preference to one, detailed in a memorial by Fleishman, presented to Congress some two years ago. This directed that the beets be dried and powdered, and soaked in warm or hot water, until the water should have taken up all the sugar contained in them. The water was then to be poured off, and in the course of being evaporated was to be cleansed by aid of eggs, animal charcoal, &c. The process has been conducted with the utmost care possible, and the result is a waxy, rank flavored, sweetish mass, in which I am positive there is not sugar equal to 1 per cent of the beets used. In another experiment I availed myself of the fact that boiling alcohol takes up one-sixteenth of its weight of sugar. I dried the beet and powdered it, and boiled it in alcohol. The solution was then dried down and gave me much the best result I have ever obtained; but it was not sugar, nor was there one per cent of sugar obtained from the beet by this process. For a confirmation of the ground I have taken, I need only to refer to the frequency with which we have occasion to know that the beets brought upon our table are totally destitute of sweetness.

In conclusion, I have no hesitation in saying, that the French sugar beet raised in this country, is so destitute of sugar, and the manipulation so tedious and difficult, that it cannot be raised with the view of supplying the place of sugar from the cane; and further as an article of food for animals, it will be found to be greatly inferior to any other root raised for that purpose, if not absolutely worthless. S. GUTHRIE.

Sackett's Harbor, N. Y. Jan. 20, 1841.

Management of Salt Marshes.

MESSRS. GAYLORD & TUCKER—Mr. Fairbanks inquires through your paper, what kind of grass seeds are best adapted to salt marshes. I have made some few experiments with salt marsh, without attempting to keep off the salt water, (I mean the heads of creeks, that are frequently overflowed by salt water,) by scattering the seeds of Herds grass, (known to some persons as red-top,) over the marsh, and leave them to vegetate as they might. I have also sowed wheat upon the mud and turf thrown out of a ditch, cut through the same kind of marsh, and it has flourished and produced well, and so did the herds grass; and I have no doubt that good crops of hay and wheat might be raised upon reclaimed salt marshes, if they were ditched and the tide kept off. I think the best way to prepare such marshes would be, to burn off the grass, cut narrow and deep ditches, and spread the mud over intervals, for the purpose of making a bed for the seed, although they could not be long cultivated in wheat, as by destroying the grass roots, (turf,) the marsh would settle too much and perhaps become miry, but they would not become so if kept in grass. Marsh mud and turf, when dried and pulverized, make excellent manure for every kind of crops raised in this part of the country. No doubt it would vastly improve by lime. Herds grass seed can hardly be sown too thick; about two bushels to the acre is the usual quantity, but three would be better; it may be scattered upon the ground, and covered by dragging a rough bush over it, or if the ground be not prepared, by permitting cattle to trample it in.

Yours respectfully, HENRY WHITING.

Hampton, Va. Dec. 12, 1840.

Hints to Correspondents.

MESSRS. GAYLORD & TUCKER—When I am at a loss for something to interest me, I hunt up the numbers of the Cultivator, and this resource hardly ever fails me. In this way, I have read some of the articles of your paper half a dozen times, and always with unflagging interest. The secret of this is, that they are in the line of my business; and at every reading some new idea is suggested that may profit me in my profession. Your articles on draining have taught me how to drain my lands, from which I have derived some profit, and from which I expect to derive more. From your disquisitions, I am in hopes I shall learn the proper mode of applying, as well as the most economical mode of making and saving manures. Certain it is that many sources of obtaining manures have been pointed out, of which I had not dreamed before; and from your various publications, I have been made acquainted with modes of culture and farming implements, and improved breeds of domestic animals, of which I had no previous knowledge. Some other things I have learned, and I hope I shall yet learn many more from the columns of your paper. Among the many articles which I have read with interest is Mr. GARNETT's of Virginia, in favor of applying manures to the surface of land; and it would seem that the experiments with his cow-pens, &c. as detailed by him, go a good way to prove that manures should not be buried in the earth; an opinion to which my mind has been brought, in opposition to my preconceived opinions and my previous practice, by an observation of facts. But in the experiment detailed by Mr. Garnett, there is one material fact omitted. Mr. Garnett has not told us the character of the soil upon which his experiments were made. If it were a sandy porous soil and subsoil, it is obvious that the necessity of keeping the manures near the surface is greater than if the soil be a more retentive one; if, indeed there be any truth in the opinion that sandy, porous soils lose more from solution and infiltration than retentive clays. If this shall meet the eye of Mr. Garnett, he will oblige me and perhaps others of your readers, if in some future communication he will state the character of the soil and subsoil upon which his experiments have been made. If all those who give us accounts of their experiments, would uniformly state the character of the soil upon which they are made, they would be more satisfactory and more useful.

In your October number there is some sensible remarks on rolling land, and an experiment is mentioned of a field of corn, one half of which had been rolled, and the product increased by the roller. Upon reading this, will not every one naturally ask, what was the character of the soil? For if it were admitted that all soils are benefitted by rolling, yet it will not be contended that all are equally benefitted; and indeed, it would seem somewhat paradoxical that a soil which is too heavy, and a soil which is too light, should both be benefitted by rolling. Light sandy porous soils are improved by the treading of cattle, but stiff tenacious clays are as much injured by it.

There is another omission on the part of your correspondents, that occasions inconvenience, and frequently abates the value of their communications to distant readers—in failing to mention in their address, the state from which they write. Communications are addressed to the public from places, whose locality is unknown to many of your readers. In all experiments in agriculture, it is important that the character of the climate and the character of the soil should be known.

GEORGE H. CHRISMAN.

Harrisonburg, Va. Dec. 20, 1840.

Transportation of Cattle.

MESSRS. EDITORS—In your January number I notice the wish of a correspondent, who contemplates moving to the west, for the probable expense of transporting some cattle to Chicago. I think I can enlighten him some on the subject. Two years ago last fall, I took a trip to Indiana via Chicago. I took with me a bull, two cows and a calf. From Albany to Buffalo it cost me ten dollars a head for the grown cattle, and five for the calf; I took care of the cattle myself, and purchased hay along the canal as I wanted it, which saved the expense of freight. At Buffalo I shipped for Chicago on board of a steamer, and they charged me sixteen dollars a head for the grown cattle and eight for the calf.

By shipping in the summer when freight is scarce, probably they might be shipped for one half of the above expense; or much might be saved by procuring young animals.

Having been through the *mill* myself, perhaps a few hints would not come amiss. My first would be to secure the hay on board of the steamer, especially if there are horses or other stock on board. I purchased enough hay at Buffalo to carry me through to Chicago, but it was all gone when we arrived at Detroit. The first night after we left Buffalo, I thought, before I *stowed* myself away, I would see how my cattle liked the forward deck, and while up there I found some of the steerage passengers making very free with, and filling their ticks with my hay. I put a stop to that by giving the hand on watch, a *scale* to keep a sharp look out for my hay. I found before I had been out long that I had in addition to my cattle, a span of horses to keep, the owner having shipped them without hay. I told him that he must return as much hay as he had taken, when he landed. It chanced to be night when we arrived at Detroit; he got his horses off, and I had to *whistle* for my hay.

I presume, as I said before, cattle could be shipped to Chicago cheaper than it cost me, for when I arrived at Buffalo the season had so far advanced, that there was but one more steamer to go through the upper lakes; I had no alternative but to go by that vessel and pay their price, which I think was rather more than would have been charged had there been competition.

At Albany some difficulty may be had in not finding the right kind of a boat. I could find no boat to take them except a scow—though perhaps in the summer the line boats would be willing to take cattle, as they would not have freight enough to take up all the room. Before starting on my journey, I halter broke my cattle, and could lead them as you would a horse. I would recommend this to your correspondent, as he will find it very convenient, and save him a vast deal of trouble. *Pleasant Hill*, 1841. WM. BEMENT.

CONTENTS OF THIS NUMBER.

Trial of Plows in England and at Worcester, Mass..... 25
Necessaries and Luxuries—National Gallery of American Agriculture and Manufactures—Notes on European Agriculture—Working to be Idle—Candles, 26
Vermont Butter—Comparative Profits of Small and Large Farms—American Society of Agriculture—Agricultural Journals, 27
Means for the improvement of Agriculture—Indian Corn—Production of Silk—Flour Trade on the Erie Canal in 1840—Mr. Colman's Addresses—Transactions of the New-Haven Agricultural Society, 28
Legislative Aid to Agriculture—State and Condition of Agriculture in the United States—Comparative Value of Figs—Agricultural Soiree—Young Men's Agricultural Society of Dutchess, 29
Work for the Month:—Look Well to your Stock—Settlement of Accounts—"Keep the door Shut!"—Examine your Implements—Lice on Animals—Hot Beds—Collection of Cions—Wheat Fields, &c. 30
Answers to Inquiries:—Preservation of Timber—To Prevent Hogs from Rooting—Clearing and Improving New Lands—Hedges—Horse Rakes, 30
Dictionary of Terms used in Agriculture, &c. 31
Notes for the Month—To Correspondents, 32
Remarks on Ornamental Gardening, by A. WALSH—American Society of Agriculture, by SOLON ROBINSON, 33
Horses, by H. S. R.—Results of Experiments, &c. by H. M. GAYLORD, 34
The Rohan Potato, by H. D. GROVE—Utility of Horse Carts, by C. N. BEMENT, 35
Mr. Prentice's Short Horn Cow Matilda, &c. by E. P. PRENTICE—Preservation of Roots, &c. by J. M. GARNETT, 36
Self-protecting Bee-Hive, by WM. M. HALL—The Farmer's Agricultural Society, by "R."—Inquiries, 37
Short Horns vs. Herefords, by J. H. HEPBURN—Reply to "N. N. D" by HOLKHAM—Raising Potatoes from the Seed, by W. W. VAN LOAN, 38
Hot Air Furnace, by J. J. THOMAS—Chinese Tree Corn, by H. VAN KLEECK, J. W. POINER, and "T. A."—Board and Stone Fence, and Churning Milk in Mexico, by S. W. JEWETT—Culture of Wheat, by "L."—Sugar Beet, by P. DIEHL—Large Pigs, by "M. Y. T." and W. L. SMITH, 39
The Sugar Beet, by S. GUTHRIE—Hints to Correspondents, &c. by G. H. CHRISMAN—Management of Salt Marshes, by H. WHITING—Transportation of Cattle, by WM. BEMENT, 40

Illustrations.

Fig. 7.—Prouty & Mears' Premium Plow, 25
Fig 8.—Ground Plan of a Garden, 33
Figs. 9. 10. 11. 12.—Arbors, Trellises, &c. for Gardens, 33
Fig. 13.—Scotch Horse Cart, 35
Fig. 14.—Mr. Prentice's Cow Matilda, 36
Fig. 15.—Self-Protecting Bee-Hive, 37
Fig. 16.—Section of Board Fence, 39